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BULLETIN OF THE

TAYLOR SOCIETY

A SOCIETY TO PROMOTE THE SCIENCE AND THE
ART OF ADMINISTRATION AND OF MANAGEMENT

THE CO-ORDINATION OF SALES WITH SCIENTIFIC PRODUCTION

PROCEEDINGS

OF A

CONFERENCE OF SALES EXECUTIVES

NEW YORK, JUNE 25, 1920

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TAYLOR SOCIETY

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29 WEST THIRTY-NINTH ST., NEW YORK

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OBJECTS OF THE SOCIETY

(Extract from the Constitution)

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure an understanding and intelligent direction of the principles governing organized effort for the accomplishment of industrial and other social purposes for the mutual benefit of
    - A. The Community
    - B. Labor
    - C. The Manager
    - D. The Employer

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptation and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, labor, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective social responsibility.

(Continued on inside back cover)

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TAYLOR SOCIETY
A SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT
ENGINEERING SOCIETIES BUILDING
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COMMENT

THE conference of sales executives of June 25, the proceedings of which appear in this issue, accomplished its principal purpose, even though the participants did not carry away with them a single concrete thing—policy or mechanism—immediately useful. More than a hundred executives did carry away something better than that—a new slant on the sales department problems, not a little new inspiration, and an agreement to make some investigations and come together for another conference.

ALSO, they put up to the Taylor Society the proposition that it should authorize a professional section for sales executives. There is merit in the proposition. Just now thoughtful sales executives, especially those who have contacts with scientifically managed production departments, are asking themselves whether the scientific method of handling production problems may not be utilized in the sales department. As a section of the Taylor Society they would be in touch with the people who could help them to answer the question; in an independent association they would be out of touch with such consultants. On the other hand executives of scientifically managed production departments are experiencing difficulties because associated sales departments are not using similarly precise methods, and because sales and production departments are not properly coordinated. A sales executive section would enable them to attack that problem in cooperation. It is not unlikely that by the time this issue appears the Board of Directors will have authorized the formation of such a section.

THE origin of the conference is worth putting on permanent record. It will be recalled that at the May Rochester meeting had been held a round-table conference on "Scientific Methods Applied to Sales Operations." That conference did not get far, but it proved to have been an inspiration, for it discovered an intense interest in the question whether scientific production methods can be duplicated in scientific sales methods. A resolution was passed requesting the Taylor Society "to call within ninety days a meeting of managers especially interested in the application of scientific methods to sales operations." What was in the minds of those who passed the resolution is best indicated by excerpts from two follow-up letters received by the Taylor Society: "The specific point at which the discussion seemed to arrive was that the extension of scientific management in the factory made absolutely necessary a coordination of the efforts of the sales department with the manufacturing, which involves some sort of planning and control; that in order to learn how to institute such planning and control it is necessary to begin in the sales department, as has already been done in manufacturing, with thorough analysis of present methods; in other words practically the extension of time and motion study to the salesman's job;" and "I am sure that the sales department of a firm that is employing scientific methods in production cannot function successfully without coordinating scientific selling with scientific production, and the money spent in developing scientific production is to a certain extent nullified by unscientific sales operations."

FOLLOWING are the appointments to committees called for by the conference. These committees are to pursue investigations and make reports —preliminary at least—at a Fall meeting. It is hoped such reports can be prepared in time to send out abstracts in advance of the meeting.

I. COMMITTEE TO PREPARE QUESTIONNAIRE; also to act as a planning and directing committee:

Willard E. Freeland, Chairman of Committee on Organization and Functions of the Sales Planning Department.

(Mr. Freeland will be in the West until November, 1920. In his absence Mr. A. B. Rich will act in his place on all committees.)

Charles J. Crockett, Chairman of Committee on Organization and Functions of Sales Operating Department.

Charles P. Staubach, Chairman of Committee on Sales Quotas.

E. St. Elmo Lewis, Campbell Ewald Co., 18 W. 34th St., New York.

Henry Wood Shelton, Industrial Engineer, 804 Pennsylvania Bldg., Philadelphia, Pa., Secretary of the Committee.

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Henry T. Noyes, Art in Buttons, Inc., Rochester, N. Y.

Charles E. Percy, Joseph & Feiss Co., Cleveland, Ohio.

G. H. Kerr, E. I. du Pont de Nemours Co., Wilmington, Del.

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IV. COMMITTEE ON THE SELECTION AND TRAINING OF SALESMEN.

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Boyd Fisher, Lockwood, Greene & Co., 60 Federal St., Boston, Mass.

C. R. Cary, Leeds and Northrup Co., 4901 Stenton Ave., Philadelphia.

Fowler Manning, Diamond Match Co., New York.

Charles R. Sturdevant, American Steel & Wire Co., Cleveland, Ohio.

N. S. Robson, Rochester Button Co., Rochester, N. Y.

V. COMMITTEE ON SALES QUOTAS.

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W. C. Dunlap, American Multigraph Sales Co., New York.

M. S. Eylar, Elliott-Fisher Co., Harrisburg, Pa.

R. N. Fellows, Addressograph Co., Chicago.

C. E. Steffey, Sales Manager, National Cash Register Co., Dayton, Ohio.

J. R. Worden, Frederick Stearns and Co., Detroit, Mich.

THE EARLY STEPS OF TAYLOR'S TECHNICAL ADVANCE

By

H. S. Person[1]

I. INTRODUCTION

THERE have been—and still are—several misunderstandings of the Taylor philosophy and system of management current among plant managers which have profoundly influenced their attitude towards it and restricted that open-mindedness and receptivity of new ideas and things commonly believed to be characteristic of the American business man. These misunderstandings first appeared about 1911, when scientific management was brought to public attention by the Eastern Rate Case hearings. The first incorrect inference was that scientific management was at that time something new, something recently conceived and suddenly promulgated, a *theory* which had no background of thorough trial; the second was the inference that scientific management had been first conceived as a theory and that the system was simply a body of mechanisms hastily worked out to support the theory; the third was the inference that scientific management, the Taylor System, was a mechanistic thing which could be contracted for—transported, so to speak, through the medium of an engineer—and installed as a fixed mechanical contrivance; and the fourth was the inference that scientific management, during whatever vague past it had enjoyed, had induced labor opposition in many of the plants in which it had been "installed." All of these misunderstandings, inferences made about 1911 when the public first heard of scientific management, have had an astonishing survival in an industrial community of apparently open-minded, boldly experimental and hard-headed executives.

Denials of everyone of these misconceptions have been made by those informed concerning the early history of scientific management, but these denials have been general and unsupported by systematic evidence, and have on the whole been discounted by the misinformed as partisan statements. The purpose of this article is to tell enough of the story—high lights only—of the beginnings and growth of scientific management to relieve those who are laboring under misapprehension.

To correct the first inference—that scientific management was a new and untried philosophy and system of management at the time it first received public attention, in 1911,—it may be said that it had been worked out in its fundamentals by Taylor during the period 1880—1889, and further developed in most of its details during the decade 1890—1899; and that nearly all the story subsequent to that time is a story of refinement which resulted in no fundamental modifications.

With respect to the second incorrect inference,—that scientific management originated as a theory, in support of which mechanisms were subsequently devised,—the fact is that the mechanisms resulted from a series of attempts by a shop foreman to solve practical shop problems, as they appeared one after another, with no thought of a "system;" and that the coordinating of the mechanisms into a system, the philosophizing about them and the formulation of principles were later inspirations.

Of the third incorrect inference,—that scientific management is a transportable mechanism, subject to reproduction in detail in different places with the rapidity involved in mechanical installation,—it should be observed; that in its origin scientific management was a *development* and not an *installation*, that every genuine instance of its appearance in a plant has been a development, and that dependable engineers today undertake to give plants the benefit of it only as a matter of development; and further, that such development is on the whole a problem of *adapting* proven principles and well-tested mechanisms to local conditions, physical and psychological.

Concerning the fourth incorrect inference,—that scientific management has experienced the opposition of workers in the plants in which it has been developed,—it should be said, first, that distinction should be made between plants in which there has been an honest undertaking to *develop* it patiently, as required by its nature, by competent engineers and executives, and plants in which incompetent engineers or get-rich-quickly executives have tried to appropriate parts of its mechanism under the label "scientific management" (a term which cannot be applied to any separated element of its mechanism); and second, accepting the above distinction, that in no plant representing the serious and genuine development of scientific management has there been a strike, or abnormal friction arising from dissatisfaction of the workers.

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[1] Managing Director, Taylor Society, New York.

The following fundamental truth concerning scientific management should be kept always in mind; an honest undertaking to improve management in the *spirit* of scientific management and by the method of patient *development* and *adaptation,* even though many of the conventional mechanisms are modified and some of them lacking, is genuine scientific management; while the effort to *copy* the mechanisms with minute accuracy, without the proper spirit, and by the method of get-rich-quickly *installation,* is not scientific management and almost invariably leads to trouble.

II. TAYLOR'S EARLY YEARS AND PERSONAL CHARACTERISTICS

In Table I is presented a chronology of the outstanding events in Mr. Taylor's life and general statements concerning "mechanisms" and "principles" of what came to be called scientific management, according to his attention to them at different periods of his life. His early life was not different from that of the average boy, except that several European trips of the family gave him, while still a boy, reasonable command of the French and German languages. Entered at Phillips Exeter Academy, he soon had to leave on account of a serious weakness of his eyes. Realizing an inclination for engineering work, he apprenticed himself to the Enterprise Hydraulic Works of Philadelphia, first to learn pattern-making, later the machinist's trade. At the Centennial Exposition in 1876 he had charge of the exhibits of several machine-tool builders, after which he, during the dull times that followed, secured a job as a laborer in the machine shop of the Midvale Steel Company. However, he was soon graduated from this job, and a brief sketch of his subsequent career at Midvale is indeed impressive. Between the ages of 22 and 32 (1878-1888) he was time-keeper, machinist, tool-keeper, assistant foreman, foreman, master mechanic, director of research, assistant engineer and finally chief engineer,—no ordinary accomplishment; and at the same time (his eyes having improved) he earned by evening work the M. E. degree at Stevens Institute, and developed, as the concrete results of his method of attacking the production problem confronting him, the fundamentals of the system which came to be identified with his name. Obviously the accomplishment of an extraordinary individual!

In fact, Taylor possessed the combination of four strong qualities. The first of these was an experimental and inventive mind (he was the holder of numerous patents in a wide and diversified field). An authentic story informs us that at the age of five or six, being troubled with unpleasant dreams and having come to the conclusion that it was caused by sleeping on his back, he constructed a harness which held an obstacle against his back and made it impossible to lie on it with comfort; again, when he came to learn golf he studied the best form, and then constructed a harness in which by practice he coordinated eyes and muscles, much as a pacing horse is developed; and so on.

A second strong quality was a mental quality which enabled him to understand and perceive the necessity of the scientific method—the keeping of all variables under control and the recording of all conditions surrounding an experiment. Early in the series of experiments which lasted through many years, he grasped this essential nature of the scientific method, and thereafter all experiments and investigations conducted by himself or under his direction were precisely controlled and recorded. One has but to refer to "On the Art of Cutting Metals" to be impressed by this fact.

In the third place he had bulldog tenacity and infinite patience. Having decided upon a line of experiments he followed them through after others about him had abandoned all expectations of satisfactory results; the perversity of inanimate things, the indifference—even the frank opposition—of individuals, served as a stimulus for him. Of his metal-cutting experiments it is recorded: "He expected that these experiments would not last longer than six months... with the exception of a few comparatively short periods, however, they have continued...through a term of about 26 years.[1]"

Finally—possibly the factor which made the other qualities effective—he was a man of common sense, of hard-headed practicality. He had vision, but was

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[1] *On the Art of Cutting Metals,* p. 33.

TABLE I.

PRINCIPAL EVENTS IN THE LIFE OF FREDERICK W. TAYLOR.

CHRONOLOGY	*MECHANISMS*	*PRINCIPLES*
1865 Taylor born.		
1878 Entered Midvale Steel Co.; successively laborer, timekeeper, machinist, tool-keeper, assistant foreman, foreman, master mechanic, director of research, assisant engineer and in 1888 became chief engineer. By night study earned M. E. degree at Stevens Institute.	During the ten years at Midvale busy on the problem of production, and in that connection devised many of the methods and mechanisms of scientific management.	
1885 Joined A.S.M.E		
1886 Towne's A.S.M.E. paper "The Engineer as Economist."		
1889 Left Midvale; during next ten years miscellaneous work culminating at Bethlehem Steel Co.	During the ten years leading to and including Bethlehem, improved the earlier and devised new methods and mechanisms, and began coordination of them into a more or less controlled system.	The formulation of principles and of a philosophy seems to have been inspired by A.S.M.E. contacts, by Towne's paper of 1886, and by Taylor's belief that a young engineer should contribute to his profession. The first statement of Taylor's philosophy of management was his paper of 1895; the same philosophy was presented with different emphasis in the paper of 1903. During this period he ceased to "work for money" and devoted himself to exposition of principles.
1893 A.S.M.E. paper "Notes on Belting."		
1895 A.S.M.E. paper "A Piece Rate System."	At Link-Belt and Tabor the system was developed into a more complete, logical and coordinated whole than at any previous time, by younger engineers under Taylor's supervision.	
1903 A.S.M.E. paper "Shop Management."		
1904 Started work at Link-Belt Co. and Tabor Mfg. Co.		
1911 Eastern Rate Case and Watertown Arsenal investigation. Publication of "Principles of Scientific Management"; republication of "Shop Management."	Continued development and application of the Taylor methods by the younger engineers who had served with Taylor in this work. Taylor generously gave counsel without remuneration.	Spent the later part of life in expounding philosophy and principles before general public.
1915 Taylor's death.		

neither dreamer nor theorist. He was a doer. Most things he asked of a worker he could do himself with sufficient degree of skill to establish that he knew what he was talking about; and occasionally for purposes of instruction he relieved a workman at a machine. The mechanisms he advocated or the principles he formulated had either actually been proven by experiment or experience, or they were reasonable deductions from experiment or experience.

This was the kind of man who at the age of twenty-four became a foreman at Midvale.

III. THE FIRST ELEMENT OF TAYLOR'S PROBLEM

DETERMINING THE BEST WAY OF DOING EACH JOB

"In the fall of 1880, the machinists in the small shop of the Midvale Steel Company, Philadelphia, most of whom were working on piecework in machining locomotive tires, car axles, and miscellaneous forgings, had combined to do only a certain number of pieces per day on each type of work. The writer, who was the newly appointed foreman of the shop, realized that it was possible for the men to do in all cases much more work per day than they were accomplishing. He found, however, that his efforts to get them to increase their output was blocked by the fact that his knowledge of just what combination of depth of cut, feed and cutting speed would in each case do the work in the shortest time, was much less accurate than that of the machinists who were combined against him. His conviction that the men were not doing half as much as they should do, however, was so strong that he obtained the permission of the management to make a series of experiments to investigate the laws of cutting metals with a view to obtaining a knowledge at least equal to that of the combined machinists who were under him.[1]"...."the original object, for which in 1880 the experiments were started (was) taking the control of the machine shop out of the hands of the many workmen, and placing it completely in the hands of the management, thus superseding 'rule of thumb' by scientific control.[2]"

These words from Taylor's own pen, adequate for a scientific article, do not tell the whole story. He had been worker with the workers and carried into his foremanship positive knowledge that there was systematic restriction of output; also he believed his new duties required the securing of better production. He adopted, naturally, the then usual foreman's methods,—suasion of the drive type (it was 1880 and the *steel* industry!) This led only to bitterness, occasional physical violence, no improvement in production and apparently no possibility of improvement. Taylor thought hard about it and conceived a reason for the difficulty and a way out; he decided he was at a disadvantage because the workers knew more about their skill than he (or management) did; he would learn to know more than they collectively did; then perhaps by advantage of that superior knowledge he could secure what he wanted by its use in negotiation with them. He had no "system;" no philosophy; he had simply a not unusual practical problem of a foreman; and he set out to solve that problem.

To learn the content of the workers' skill, he began what has come to be known as job-analysis by the method of unit time study. He did not set up a laboratory, but did what amounted to the same thing; selected a machine and a worker or workers, controlled the conditions around the machine,—power delivery (which led to "Notes on Belting"), uniformity and availability of materials, control of feeds, speeds, depth of cuts, etc., (which led to "On the Art of Cutting Metals") and made precise and thoroughly scientific (variables under control) observations and records. In a short time he had sufficient data, for certain operations, with which to determine how long a given operation should take under specified conditions.

He also observed that if operations were performed under these conditions the output would be increased per unit of cost; that there would be a net gain, part of which could be added to the wage rate, thereby securing an incentive for increased output to replace the conventional ineffective and disagreeable foreman's method of suasion.

Thus was the first element of the problem solved;—specifications for operations based on precise knowledge of the best methods and of times necessary for their performance, and an extra possible profit, part of which could be used in a higher wage rate to secure the cooperation of the workmen. He sold the idea to enough of the workers to begin to try out the new method of work according to specifications which indicated the "best way" of performing an operation, the participation in the experiments on the part of some workers and the watching of them on the part of others having interested the men and cleared the ground for harmonious relations.

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[1] *Ibid*, p. 33.

[2] *Ibid*, pp. 39-40.

IV. THE SECOND ELEMENT OF TAYLOR'S PROBLEM

STANDARDIZING CONDITIONS IN THE SHOP

Taylor had apparently seen from the beginning that there was a second element of his problem, and that a solution of it was necessary before the new methods of work could be inaugurated. The methods and the times embodied in the specifications were based upon particularly favorable conditions surrounding the machines on which the investigations had been made. If those specifications were given to men on other machines, machines not operated under the precisely controlled conditions of the machines upon which the experiments had been performed, then work in accordance with the specifications would be impossible. Here was a bigger problem than that of learning the content of skill, and Taylor did not refuse to face it. He at once attacked the problem of *standardizing the conditions* in the shop. He would give every worker the perfect opportunity.

To give every worker the perfect opportunity was, therefore, to bring the conditions throughout the shop to the same standard as the conditions surrounding the machines on which the standard methods had been worked out. Before Taylor left Midvale in 1889 he had devised most of the fundamentally important mechanisms of what came later to be known as scientific management;—not in their subsequent finished form and not coordinated into a system, but merely to an extent necessary in a shop of large machines on which the operations were relatively simple and took considerable time. But more important than the mechanisms is the fact that the point of view, the spirit, which inspired this development was as thoroughly scientific management as it came at any later time to be.

We know from the records that during that period there were developed: unit time study[1]; elementary rate fixing[2]; "tables" for tasks and the assigning of tasks[3]; standard conditions for belts[4]; tools[5] and machines; planning in advance, "lists" of work ahead and "chasers" to follow-up work[5]; the shop bulletin board[5] the differential piece rate[6]; and the following elements of functional foremanship—time clerk, instruction card clerk, inspector and disciplinarian (the modern employment manager), each of whom had supervision over workers which was direct and not through the gang boss[7]. In general terms Taylor says there were "all the fundamentals of task management[8]," "the best way of managing men on day work[9]," and the idea that the big losses of poor management came from "incidental delays[10]," to remove which was a principal objective of good management. There was as yet no planning department, separately organized[11], for the shop was so small and the machine work so simple that the planning function did not have to be functionalized. For the same reason probably, there was no functionalized routing and route sheets. It should be borne in mind that the shop in which scientific management had its beginnings at Midvale was engaged chiefly on turning out locomotive axles and tires, and there was none of the complexity and minuteness of scheduling of the machine shop which does miscellaneous work. It was the application of scientific management to this latter type of shop which later compelled refinement and coordination of the mechanisms.

V. THE THIRD ELEMENT OF TAYLOR'S PROBLEM

MAINTENANCE OF STANDARD CONDITIONS

It is well known to experienced executives and foremen that good conditions do not automatically "stay put." A shop or office well tuned up today will begin to become slack next week. So it was in Taylor's experience with the standards established throughout the shop at Midvale. Immediately he had before him the third element of the problem,— *the maintenance of the standards set.* It should be observed that, in fact, although these three elements of the problem were both logical and chronological, they were more logical than chronological. All were crowded upon Taylor practically at the same time.

The maintenance of standards is a much more complicated element of the management problem than either job analysis or the establishment of standards, for the obvious reason, among others, that the latter are subject to certain precise scientific procedure and may be entrusted to specialists—professional experts—while the former is a matter of setting up a complex group of devices to insure maintenance and the effective operation of these devices is dependent upon the entire personnel of the organization, and their varying individual interests and capacities for "playing the game." Also, the maintenance of standards may be said to be more important than either of the other two elements of the problem, for the reason that the ultimate object of job analysis and of the establishment of standards,—results in accordance with calculations through precise control—is directly dependent upon it. Job analysis and the setting of standards afford the basis for operating control; the control itself is embodied in the actual routine of operations in which also is embodied the maintenance of the standards.

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[1] *A Piece Rate System,* §44.
[2] *A Piece Rate System,* (Introduction)
[3] *Notes on Belting,* § 43.
[4] *Notes on Belting,* § 42, 111.
[5] Reported in interviews with persons now living who were acquainted with conditions in Midvale.
[6] *A Piece Rate System,* (Introduction).
[7] *Shop Management,* p. 107.
[8] *Shop Management,* p. 44.
[9] *A Piece Rate System,* (Introduction).
[10] *Notes on Belting,* § 4.
[11] *Shop Management,* p. 118.

Planning, routing, order of work, instruction cards and the tickler system; the minute specialized supervision and teaching in functional foremanship; inspection; progress and cost records;—all play their part in the maintenance of standards.

Many of the devices already enumerated as devised by Taylor in the decade 1880-1889 for the establishment of standards were concerned as well with the maintenance of the standards. The assignment of a "task" involved inquiry for reasons why a task was not met, if it was not met, and the straightening out of the improper conditions which were usually the cause of the failure to meet the task; likewise with respect to the differential piece rate and any failure to make it. The functional foremen, each with direct contact with the worker and responsible for the performance of a certain function, was a device for maintaining as well as establishing standards. The separate inspection of the first of a lot of pieces in a run (first as distinguished from final inspection) contributed its part. The automatic grinder for tools and the tool room established at that time looked towards maintenance of standard conditions of tools. The tickler system was established to insure the periodic inspection and conditioning of shafting, belting and machines, and gradually this mechanism was extended to cover other recurrent inspections and other recurrent procedure. The modern stores rooms of carefully classified, inspected and conditioned stores and worked materials was not established, for the reason that the materials used were too few to require it—huge castings, chiefly; but efforts were made to insure better standardization of the castings which came to the shop. For the same reason—the simplicity of the materials and of the processes—mechanisms for the formal recording and analysis of the progress were not devised, but apparently the function was performed without the formality of special mechanisms. The more elaborate devices for the maintenance of standards which are in use today were developed later, when scientific management came to be developed in plants having more complicated operations and conditions.

We find, therefore, that during the decade 1880-1889, as the result of efforts to solve the practical problem of securing greater production, and without preconceived principles or a preconceived philosophy of management, Taylor worked out in more or less crude form the fundamentals of scientific management. There was job analysis by the method of unit time study and the setting of tasks with instructions for their performance; there was the standardizing of conditions so that operations in the shop could be performed under the same conditions as those under which the tasks and times were determined; and there was, to the extent required by the simple processes of the shop, provision for the maintenance of the standard conditions.

There was not yet, of course, the smooth coordination of those elements into a logically beautiful system, and especially the formal separation of functions,—one group in a planning room and another in the shop. But the functions were recognized and provided for, and, looking back, one can see the planning room in embryo. It was not until later that Taylor was in a position to develop scientific management *carte blanche* and as a logical whole, in any plant.

VI. A PHILOSOPHY OF MANAGEMENT

In 1885 Taylor had joined the American Society of Mechanical Engineers. In 1886 Henry R. Towne read his noteworthy paper before that society, "The Engineer as Economist." The new contacts and Mr. Towne's address, added to Taylor's belief that it is the duty of a young engineer to add to the knowledge of his profession, appear to have stimulated Taylor so that the man who had been concentrated on solving different practical problems in the shop began to give greater attention to the meaning of what he was doing.

Beginning with Mr. Towne's "Gain Sharing" in

1889 and Rowan and Halsey's "A Premium Plan for Paying Labor" in 1891, there followed in the A. S. M. E. discussions of methods of wage payment. Taylor conceived the idea of getting his ideas of management before the society by participation in this discussion, and in 1895 he presented "A Piece Rate System." The coating of the pill was too heavy for the medicine within to be effective. What to Taylor's mind was relatively unimportant—the device of a differential piece rate—was adequately discussed; but what he considered of major importance—the methods and conditions of management fundamental to any sound method of wage payment—was hardly touched upon in discussion. Taylor always regretted this particular excursion into the field of discussion of wage systems, for it attracted attention to his differential piece rate at the expense of comprehension of his methods and philosophy of management; and it gave rise to the incorrect tradition held by many that scientific management grew out of attempts to devise a satisfactory method of wage payment. It had, as we have indicated, grown out of attempts to solve the practical problem of getting production in a shop, and the contributions to the wage problem were only incidental.

Disappointed in his venture with "A Piece Rate System," Taylor decided to present another paper which should emphasize management and consider methods of wage payment as incidental—as a phase of management. Eight years later, therefore, (1903) he presented "Shop Management;" and then in 1905 his greatest contribution,—"On the Art of Cutting Metals." In 1911, when the Eastern Rate Case hearings had aroused public interest, he republished "Shop Management" as a book, and published also a popular presentation of his philosophy of management under the title of "Principles of Scientific Management."

Excepting "Notes on Belting" and "On the Art of Cutting Metals," admirable scientific treatises in which Taylor made no attempt to present his philosophy of management (although the discerning reader can find it there), but including Taylor's public addresses, it is not wide of the mark to assert that Taylor never made more than one statement of his philosophy of management. "A Piece Rate System," "Shop Management," "The Principles of Scientific Management" and occasional addresses are essentially one and the same, differing only in emphasis. No one of them is an adequate exposition. Taylor was not primarily a publicist; he was engineer-executive.

VII. DEVELOPING COORDINATION

Taylor left Midvale in 1889 and for a number of years was engaged in developing management methods in various plants, in which were presented the opportunity and the necessity for refinement, but in none of which was presented the opportunity for a complete development. In one plant one phase of his system of management, in another plant another phase, was emphasized. In 1897 his services were engaged by the Bethlehem Steel Co., and again for three years he had an opportunity, with a competent force of younger engineers, to develop his methods. This is the period of great discoveries in metal-cutting, and with respect to his management methods, a period of the development of additional mechanisms and of partial smoothing-out and coordination. "The large machine shop of the Bethlehem Steel Company was more than a quarter of a mile long, and this was successfully run from a single planning room situated close to it.[1]"

VIII. THE FIRST COMPLETE DEVELOPMENTS

In 1902 Mr. James M. Dodge, president of the Link-Belt Company of Philadelphia, inspired in part by listening to Mr. Taylor's discussions before the A. S. M. E. and by what he had seen on visits to Bethlehem, and particularly by the threat to his business on the discovery of high-speed steel, persuaded Mr. Taylor to begin the development of better methods of management in his plant. About the same time Mr. Taylor became interested in the Tabor Manufacturing Co., directed by his life-long friend, Mr. Wilfred Lewis, and in that plant also undertook the development of the new methods. While it might be said that, compared to what had preceded, the earlier opportunities in the Steel Motors Company of Johnstown, Pa., and in the Bethlehem Steel Company, had been relatively complete, it is undoubtedly correct to state that in the Link-Belt Company and the Tabor Manufacturing Company were found what proved to be the first clear fields for the development of scientific management, with practically complete cooperation. Since then many plants have accepted and developed scientific management, but these two plants will always be distinguished as the pioneers in undertaking the course of logical and complete development.

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[1] *Shop Management*, p. 110.

Taylor gave his services to these companies without charge, and worked chiefly through younger engineers, secured upon his recommendation for the detail work. Mr. Carl G. Barth and Mr. H. K. Hathaway were his responsible representatives, and both—particularly Mr. Barth, the elder—made their mark upon the development of the Taylor methods. Mr. Taylor remained in the relationship of unpaid consultant and supervisor. Assured of a modest competence as a result of his inventions, he had become able to declare that he was "too busy to work for money."

IX. LATER ACTIVITIES—LABOR'S ATTITUDE

About the time of his interest in Link-Belt and Tabor he began a career of conferences and public speaking concerning his philosophy and system of management which continued until his death in 1915. "He gave his time and his means freely to showing its operation in the Philadelphia plant to conscientious inquirers. In many instances he traveled far at his own expense to address associations and meetings of manufacturers and managers. Out of his own pocket he contributed to the expenses of young and ambitious engineers who were serving their apprenticeship in Philadelphia.[1]"

Although Taylor's career as foreman in the Midvale days had begun with serious controversy with the workers under his foremanship, *under the then prevailing methods of management,* it should be recorded that in the subsequent development of management in accordance with *his own philosophy and methods* he experienced only the most gratifying cooperation of the workers[2]. The first friction which developed was at Watertown Arsenal about 1909 and 1910, due to over-zealous and improperly measured steps of development by local authorities, especially to the extension of time study to a shop in which the conditions had not been properly prepared. No serious internal trouble developed, but the occasion was seized upon by organized labor as an opportunity for organized opposition from without the Arsenal, and there resulted the famous investigation by a committee of the House of Representatives in 1911. The report of the committee on the results of the new management methods which were being developed was not unfavorable and no legislation was recommended.

However, a few years later, without further investigation, restriction was placed upon the use of time study in government institutions by the so-called Tavenner rider to an appropriation bill. This was in response—not to importunities of workers in plants where scientific management had been developed (their testimony was apparently disregarded!) but to the political pressure of the national organization of labor in accordance with what appears to have been their then larger strategy. As the writer has stated elsewhere[1]: "An almost incomprehensible phase of the history of the scientific management movement is the existence, side by side, of improved industrial relations in those plants in which scientific management has been developed and strong opposition on the part of the management of the American Federation of Labor. The opposition of the management of organized labor seems to have been inspired by fear of the impairment of a fundamental element of their strategy (that their organization must be increased in membership and held intact, for the accomplishment of their large objectives) by one of the least important mechanisms of scientific management, the differential wage system. Inspired by this fear, and taking advantage of certain opinions held by workers (such as the opinion that increased output will cause unemployment) and certain infelicities of speech and illustration on the part of expounders of scientific management (such as the famous Schmidt case), and presenting statements concerning the actual operation of scientific management not based on critical investigation and not conforming to facts (that workmen are speeded up and worn out, that time-studies are secret, that rates are cut, etc.) the management of organized labor undertook a campaign of education of its membership which resulted in an almost solid opposition by the rank and file as well as the officers of organized labor to scientific management. In public discussion, to the opposition of organized labor was added the opposition of many social scientists who, without information derived from either experience or investigation, asserted that scientific management would make impossible the achievement of any ideal of industrial democracy. Throughout all this controversy the natural confusion of polemical discussion was worse confounded by absence of critical investigation of facts, inadequate information, and particularly by a failure to distinguish in the discussion of scientific management as a social problem, between management and administration. In this controversy the arguments against scientific management as a system of management technique were ineffective because not supported by the facts; on the other hand the arguments against scientific management with respect to its social implications were significant and of influence, but they were really arguments concerning administrative policy governing the use of management technique, and not more pertinent to scientific than to any other form of management. Superficial critics failed to perceive the point that the effective working of the scientific management mechanisms in particular depends so vitally upon sympathetic cooperation between planner, supervisor and operator, that anti-social administrative policy is inconsistent with its development and technical effectiveness...The status of scientific management has been profoundly influenced by the war. Three influences are noteworthy: (1) Although the prejudice of workers engendered by the sharp controversy preceding the war has not disappeared, open and active hostility of labor has been discontinued and apparently will not be resumed; (2) the demand for output during the war, supported by labor, compelled a wider extension of efficient production methods, in some instances of the methods of scientific management, not only in the United States but also in Europe, and both labor and management have learned by experience that scientific management technique is not inconsistent with wise, humane and cooperative and administrative policies; (3) labor and management have observed that during and following the war managers of scientific management plants and scientific management engineers have been in the van of those inspiring and directing the establishing of the most humane and cooperative administrative policies, in accordance with the most far-sighted principles of industrial relationship. War seems to have cleared away prejudice and misunderstanding and to have made possible an appreciation of the value of scientific management as an instrument for the increase of the productivity of human effort under wise administration."

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[1] Thompson, *Theory and Practice of Scientific Management,* p. 25.

[2] "The danger from strikes comes from the false steps often taken by men not familiar with the methods which should be used in introducing the system. The writer has never had a single strike during the 26 years he has been engaged in this work." *On the Art of Cutting Metals,* p. 54.

[1] *Bulletin of the Taylor Society,* Vol. IV, No. 5, p. 13.

X. CONCLUSION

To summarize: Scientific management (first called by that name about 1910) was begun to be worked out by Mr. Taylor as long ago as the decade 1880-1889, and has been steadily developing since that time; it arose not out of a preconceived theory but out of the attempt to solve practical problems of production as they appeared one after another; theorizing and the formulation of principles came after the mechanisms had been thoroughy tried; in the course of developments which represented a smoothing out and coordinating of the system there was experienced only the minor and normal friction with workers—in general a splendid cooperation.

In addition it should be observed that in the story there is a lesson for executives and engineers of today. The steps through which Taylor first developed scientific management are essentially the steps necessary for any successful specific development today. Experience has taught that the only practicable order of development in any specific instance is: preliminary analysis as a basis for standardization of conditions; standardization of conditions; provision for maintenance of the standardized conditions; and then the detail job analysis and the setting of rates by the method of unit time study in the environment of standard conditions. Out of the job analyses which follow standardization of conditions may come instruction cards, precise scheduling, bonus or other differential wage systems,—a precise general and specific control. Any other order in the improvement of management in accordance with Taylor principles is almost sure to be ineffective and to lead to trouble.

ATTENTION of members of the Taylor Society is called to the session of Wednesday afternoon, Dec. 8, of the annual meeting of the A.S M.E. (New York, Dec. 7-10.) At that session will be offered, under the jurisdiction of the Management Section of the A. S. M. E., a program on the constructive work in management of the late Henry L. Gantt.

PROCEEDINGS OF A CONFERENCE OF SALES EXECUTIVES

CALLED BY THE TAYLOR SOCIETY, JUNE 25, 1920

I. A STATEMENT OF THE PROBLEM

BY

HENRY S. DENNISON[1], PRESIDING

IT is very inspiring and a good deal of a challenge to find so many men[2] responding to the call for a meeting on this particular subject.

I think the program sent out to you has made explicit the point that probably no one here has much of anything to teach the rest of us. The call for this meeting originated in a small group meeting in Rochester at which we discovered—not a very notable discovery—that none of us knows much about the very necessary process of selling, and that every one of us is extremely anxious to know something about it.

The point is about this, I think: that as we develop efficiency in production, as we go along the road of more scientific management of the production processes, we begin to come up against the difficulties which arise out of unscientific selling or which arise out of an absence of coordination between selling and manufacturing. So that at a certain stage of the game in most businesses advance along the lines of scientific production is made difficult,—it might even theoretically be made useless,—unless a parallel advance can be made in the other branches of the business. Therefore, it was very keenly felt by the group which met in Rochester, that the Society could well serve the business community by inspiring as many as possible to approach the selling problem along the same lines, probably, that Mr. Taylor approached the production problems. Or if the analogy is strained too far there, at least to approach our great American selling problem in a scientific spirit. That is to say to find out as nearly as we can, progressively better—never perfectly, of course—what it is we want to do with our goods after they are made, and to find out at the same time how we are doing it.

Now for convenience of preliminary discussion we have cut the subject into two parts, which I think we shall find it worth while to keep distinct, although, of course, they are intimately related to each other: one part the coordinating the sales process with the manufacturing process; the other part strictly the management of the sales process itself.

In our own business and in a great many others that I happen to know about, there are three definite and distinct, but coordinate branches. We have a manufacturing department, we have a selling department, —which manages the salesmen, routes them, schedules their work, controls their methods, their pay and all the rest; and equal with each of these we have what we call the merchandising department. The merchandising department controls the goods, their quality, their character, their price, their put-up, and at the present time it has the largest control of the scheduling of their manufacture,—that is, the quantity of those goods that must be made in any given period in the future.

All of us probably have had experience with a somewhat one-sided control, in which the merchandising policy is set too much by the factory or too much by the selling end, and so strains and forces the other branches of the business. One problem for scientific business management is the coordination of the two interests; a merchandising machinery which shall take into account as well as any human machinery can, the special abilities and the special disabilities and the special possibilities of the factory and of the selling department equally, so that the merchandising policy makes a team of those two branches of the business which pulls closely together. That subject Mr. Freeland will take.

We shall keep separate,—although we shall talk about it in the afternoon session almost in the same breath,—that other problem, the actual management of the selling end. There, it seems to me, Taylor men have a distinct challenge. The selling method has, so far as I know, grown up just about Topsy fashion; there has been a very strong feeling that the salesman is born and not made, and that any sort of interference with his work would be detrimental. Of course there is a large measure of truth in that, but not a full measure of truth. In our own company we have found that there is a very considerable degree of interference, if you like to call it so, in control of the salesman's job, which is highly beneficial, not only to the concern as a whole, but to the salesman's job itself; that there is a degree of planning, of control, of scheduling for the salesman's job, that is possible and profitable.

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[1] Dennison Manufacturing Co., Framingham, Mass.; President of the Taylor Society.

[2] (There were present 105 sales executives. ED.)

So far as I know, that control has been as yet extremely crude in this country. It has been put into effect to some extent by furnishing quota for salesmen. But those of us who have had some experience with the old-fashioned way of setting piece rates by the foreman, must realize that a quota set by sales managers on rough, incorrect statistical information, is mighty little better if not a good deal worse than no quota at all. And factory experience has taught us sufficiently well, so that we need not go through the same ugly mill again in the selling end, that it is a great deal better to run along on a happy-go-lucky time rate basis until one has studied sufficiently the details of the job, how it is being done and how it can be done, so that one can set a task rate to go with a task, and a bonus for its performance. In other words, to use the language of the selling end, isn't it true that commissions, that quota, that performance rates of all sorts, would best be left untouched unless they can be set on a basis that is sound, that is the result of thorough and scientific study?

Of course most of us find ourselves in the selling end, as we found ourselves in the factory, inheritors of some performance rate. Most of us perhaps here in the room already have the commission system as a fact to deal with. Well, hundreds of factories have found themselves with unscientific piece rates and have nevertheless worked out of that situation into scientific task and bonus rates by the use of extraordinary tact and skill. It is a great deal harder to turn from an unscientific piece rate to a well-founded task and bonus rate than it is to turn from time rate to task and bonus. But it is not impossible. A factory with an unscientific piece rate I think, is a much more inefficient production unit than a factory with a happy-go-lucky time rate, and it is all the more insistently necessary to change from a poorly set piece rate to a well set task and bonus rate.

So, if we have already in our affairs a commission system, the old factory experience would dictate to us this: don't set any more. Don't increase a rough and ready commission system, or quota system, until one finds one's self with enough evidence to do it well. And meanwhile, build up a knowledge of the situation in such a way that one can finally choose the best rates.

After all, in the selling end I suppose we shall find, as we did in the factory, that rates are the less important part of the whole game. They certainly follow the most important part of the whole game. They follow an immense amount of management, of scheduling, routing, planning the work, of having the job come up to the performer with the material at hand when and where and as it is wanted. There are nine hours spent this way in any proper development of scientific management to one hour spent in setting rates.

So our problem here, the challenge to the Society that was given in Rochester, is just this: can the fundamental principles upon which Taylor did so much work in the factory be widely and rapidly applied to our selling problem? We don't believe in the Taylor Society that anybody is in a position to stand up and tell the rest of us just how to do it. But we have developed a method of approach to the various specific production problems of each business, a ground work of scientific principles pertaining to the order in which the whole production problem should be undertaken and studied.

Now the question today in which we ask all to join equally is: Can we apply to the problem of selling much the same method which has been so successfully applied to the production problems in a thousand different industries, and which is known as the Taylor system?

We have chosen two men to lead the discussion, one on the part of the problem which I have called "merchandising,"—the more specific job of coordinating selling and manufacturing,—the other on actual sales management itself. We have chosen two men to speak on those subjects not because they will settle the questions but rather because, we hope, they will unsettle the subject sufficiently to cause all of you at this afternoon's session to join in, either making such contribution as you can or raising such questions as seem to you of present eminent importance.

If this conference is a success it will result in many of us agreeing to follow out certain experimental work in the months to come, agreeing to undertake certain sorts of investigation and study of the selling problem and to come together later and exchange experiences. I am certain some concerns will go ahead regardless of a scientific study of the selling problem. I know of one at least that is bound to go ahead, and that is our own. But we can cover only a small part of the field; it would take a generation to get any sort of results. Meanwhile, if we can get the help of twenty-five or thirty other houses doing different kinds of selling, and if we can give in return our small help to them, I believe that the whole art will be advanced, not twenty-five times as rapidly, but two hundred and fifty times as rapidly.

This conference is one, as I said at the beginning, at which you can learn little, but to which I hope you can give something of a suggestive nature,—a challenge, at least, for further study; and I hope there will come an agreement to grind out this problem during the coming months and meet again for its further discussion.

II. COORDINATION OF SALES WITH SCIENTIFIC PRODUCTION

BY

W. E. FREELAND[1]

I HAVE been handed a rather obscure problem. I have also been handed a half hour in which to discuss it. Therefore, if my talk is rather sketchy, you know the circumstances that caused it.

I shall try to give you something definite to discuss because during a large part of my talk I shall confine myself to our own activities in coordination. It would be well perhaps for me to paint a little background explaining how we were forced into coordination.

As you know, we had a huge war plant. We had in our employ perhaps twenty-two thousand hands at the time of the armistice. We went down to seven thousand in a remarkably short period of time and resumed peace production with considerable speed. But we had a plant and plant facilities enlarged four times beyond the stage of 1914. That plant must be filled with new production. With that background you can see that we had a major problem. I will tell you a little of how we attacked it.

In the first place, what are the requirements of scientific production? Ordinarily, in meetings of the Taylor Society, you hear a great deal about proper tools and processes, time studies and wage systems, routing and conveying methods, planning boards, and all of the other paraphernalia of the purely scientific men in production today.

Scientific production needs two things very, very fundamentally. It needs general plans and general schedules for tools, processes, materials, labor and finances. Those things the sales departement has some measure of effect upon, to say the least. There is a peculiar inter-dependence of sales and production, not always recognized but always existing. If the business is to prosper, neither can absolutely control or dominate its policies over any considerable period of time. There is necessarily a considerable adjustment needed between the manufacturing facilities and the market demands. I think I am safe in stating that sales is the natural point of origin of new projects in a business because most of the new projects come from somewhere out in the field.

Then, too, there is always a major problem of flattening the peaks in both production and distribution. There is the job of interpreting consumer demands to the factory engineers. Someone must do that. There are certain definite obligations upon sales. First, to discover new uses and new markets for the product; second and perhaps least observed of all there must be a determined effort to resist pressure of any kind that will tend to break down mass production; third, there is a further obligation upon the sales to expand seasonal or territorial limitations.

There are, however, some obligations upon the factory. These are not always observed. One is, to maintain delivery schedules, no small task in these days of lack of labor which most of us are experiencing. The factory also has the task of maintaining or increasing the quality of the product.

Now there is a wide-spread recognition of the function of engineering in production. We recognize, most of us, the essential differences between the planning,—which is the engineering,—and the production groups in the factory organizations. We recognize that there is required special psychological or temperamental adaptions on the part of the men who are to operate the two sides. It has not been so well recognized, however, that there is a definite function for engineering in sales; and I want to interject here that when we use the term "Sales Engineer" in our factory, we do not use it in the sense so frequently used in the technical papers, of a salesman who goes out to do technical planning for the installation of a manufactured product or a machine. We use it in a sense analogous to that of manufacturing engineer.

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[1] Sales Engineer, Winchester Repeating Arms Co., New Haven, Conn.

I think perhaps many of you are familiar with the fact that we operate on a rather individual modification of the Taylor System in our plant, commonly spoken of as the Otterson system or philosophy of management, because Mr. Otterson, our president, first installed it in some of the Navy Yards of this country. When we faced this great task of filling up the partially vacant factory with the new production, he immediately instituted an organization which we called the Sales Engineering Department. And his reason for that institution was precisely the same reason that has brought about the distinction between the manufacturing engineers and the manufacturing organization. He attempted to put men of the necessary psychological makeup into the planning work which became the sales engineering, and the men of the driving, forceful operating type into what we call sales production.

I suppose I will be challenged somewhat but I think many of you will honestly agree with me that the combination of both the planning and production aptitudes and temperaments in any one sales manager is extremely rare just as it is rare in the factory manager. The man is either strong in one direction or in the other; and if he is to make a success, must surround himself with men who will supplement and fill up the deficiencies.

Now sales engineering with us has changed its color just a little since we first organized it because we have now become the master planning group for the entire organization, and that is where we reach our real work as coordinators.

Generally speaking, the work of the sales engineers is months in advance of that of the operating departments. In other words, the planning for future projects is the work of the sales engineering. The planning of current projects is the work of the production divisions.

It must not be overlooked, too, in our talk about setting up a sales engineering department, that there is a very close and natural alliance between the sales engineers and the advertising department, both doing a rather peculiar and closely allied creative type of work.

I have said that we were a master planning group. What are the elements of a master plan that will affect and guide a whole organization? In the first place, the master planners must necessarily have close contact with all parts of the organization. They must have or must create facilities for study of markets and of consumer demands. They must make an intensive study of economic trends. They must make a study of the factory facilities, either present or potential.

After these preliminary studies it becomes the sales engineers' duty to select the items and lines to be manufactured. Having done this it is up to him to present this matter in such a way that the operating parts of the organization can go to work in some coordinated manner. Therefore, the sales engineers must determine the elements of the problem and their proper sequence in the order of work. Having done this, they must then write a general plan which will allocate the work to the various divisions of the organization and set up bounds so that there will be little or no overlapping of effort.

Let me come down specifically to the way in which we touch various parts of our organization. We have the usual statistical department with its machines and trained men, and we do not undertake to do any of their work for them but we do undertake to interpret the basic statistics that we have them gather for us, and turn them into workable reports for the benefit of the operating sales organization. For the benefit of the sales production staff, we make field surveys of new production that should be added to our line. We make field surveys to ascertain where new markets may exist. We make field surveys, too, to determine new uses for our old products; and we try and keep an ear to the ground while we are out in the field and to do some intensive thinking in our offices toward accomplishing further refinements in our line of production.

Then, too, because we have built up a staff of research men,—and I challenge anyone to deny that the average salesman is not a research man,—we undertake to ascertain for the benefit of the entire organization the reaction of the dealers and the consumers towards our products and also our selling methods, because some of the worst reactions we have discovered are not directed towards our products but are directed towards the method by which we attempt to sell them.

When you go into an extensive line of production as we are going in,—manufacturing cutlery, fishing tackle, flashlights and batteries, tools of various kinds, skates, various kinds of sporting goods,—you can imagine that we run into the problem of seasonal and territorial demands. It quite obviously becomes a large part of our task to clearly ascertain what are these seasonal and territorial limitations.

Then, too, in these days of protest against existing prices, particularly as we are situated in one of the branches of industry in which prices are still climbing, it is quite necessary that we know very closely about price changes and price trends. In one respect all of you have the same job that we have. You have to keep an eye on competitive activities. We have several very lively and very efficient competitors.

And then another thing that we have to do,—and it is no small task; in fact it has become one of our great problems,—is the study of packing and shipping methods. Those of you who have tried to get labels, shipping boxes of almost any kind, cartons and so on have some realization of what it means to put three or four thousand new products onto the market at the rate of twenty-five or thirty or forty a week and attempt to get packing material and get it right for all these various products, particularly when you are trying to put them out as a family of products and carry through the entire packing certain attractive merchandise ideas.

For the sales production crew we do another thing, an essential thing. We try to give them advance reports on new products and changes in old products that will affect sales efforts; try to give them this so far in advance that they can do some intelligent sales planning. We carry on in the Winchester organization a very extensive dealer service, perhaps more noteworthy in some respects than anyone else has been attempting; and we undertake to do for the sales production such engineering work, or give them such assistance in the engineering phases of the work as is possible. This applies to getting up exhibits, the preparation of salesmen's equipment, all those things which the technician must have a hand in; and in our case they delegate much of this work to the sales engineering staff.

We render such assistance as we can in convention and club work. We keep up an advisory inspection of the sales efforts and results. Not that we have power to control their actions because a functional type of business is founded primarily upon a theory of cooperation. There is a very little control in our business of one department by another. A man must cooperate or drop out. We do special research work of all kinds for this sales production staff for the reason that they have not the men or the training for that type of work.

Furthermore, we retain the final approval on all models of new products and on all new packing. After the manufacturing engineers in the factory have got through with their work on samples, it must come back to the sales end for its final approval and that final approval rests with us. But that, gentlemen, is a matter of organization, because it happens only rarely that we pass final inspection or final approval upon a new product until we have called in conference the men who later will have to sell that product. In other words, we try at the time to sell this new product to them, because if they do not believe that it is correct in design, in finish or in any part of its manufacture, they will never put themselves in a position to get strongly back of it when it comes to the distribution. That again I say must be built upon a spirt of cooperation.

Sales engineering has some contact with advertising. It consists largely in certain merchandising studies; and by that I mean studies of the methods of merchandising in regard to display, even to pricing. We have control of the pricing in the sales engineering organization. I don't know whether that is permanently so or not, but for the present we are holding it there. We try to furnish them with all immediate technical information for any kind of publications that they may issue. We do for them special field or advisory service as we do for all other parts of the organization, and we give them very specific reports on seasonal and territorial variations in consumer demands; and those of you who are familiar with the money that has been wasted in improper advertising will realize just how essential that is to the advertising department. I do not mean that they cannot secure it from other sources, but they cannot secure it so accurately from other sources as we are able to furnish it to them. And perhaps that needs a bit of explanation.

We are building up a chain of hardware stores in this country. In fact we are building up two chains of hardware stores,—combined hardware and sporting goods stores if you please. We purpose having one exclusive agent in every town in the United States large enough to support a desirable agent. That agent will have the exclusive sale of all of our new products, but not of our old line of guns and ammunition. We purpose also having eventually in every city of 50,000 or over, stores of our own, and some of those stores are now open in New England.

You can see, then, having these stockholding agents,—and these agents are stockholders in our business only in a small way but nevertheless it gives them a real interest,—that we are able to go out into any section of the country and get some specific reports given to us by men who are friends and have a selfish interest in our welfare. There are few sales organizations thus happily placed.

Sales engineering has little to do with the warehouse department in our organization. The warehouse department is an entirely separate organization reporting directly to the general manager and having some control over what they also term merchandising, which is the distribution problem in its physical phase and the maintenance of stocks and the placing of orders on the factory. In other words, they become also a buffer between the factory and the sales organization. We furnish them with the initial sales requirements on all new products. We give them early information of unusual demands or unusual trends. We give them the same interpretation of basic statistics that we furnish to sales production, and we do for them occasionally some field service.

One of our closest tie-ins very naturally is with the manufacturing engineers, because our work is to select the line and their work is to develop it. We give them specifications of our new products. These specifications are fairly minute. We have the responsibility for the standardization of lines. I do not know whether you appreciate just what that means unless you have been in a business similar to some of those in which we are engaging.

Prior to the war one of the largest pocket knife manufacturers in this country made over six thousand different patterns of knives. We think,—we haven't been tested out thoroughly yet but we have somewhat,—we think that we are covering every need of this country with a sufficiently diverse line of pocket knives with one hundred and twenty-nine patterns, and the best evidence that we are on the right path is that the largest hardware jobber in this country controls a pocket knife factory and he has followed our lead and gone us one better by cutting down to one hundred and sixteen patterns. Another evidence of what standardization means is in our venture in the manufacture of flashlights. We carried standardization there to what many thought was beyond reason. But about a month ago our largest competitor, which practically dominates the flashlight field, reduced its line from seventy-seven patterns to thirty-three. In other lines we have likewise been followed by competitive manufacturers who have welcomed our lead in this great problem of standardization, because standardization means two things: It means an increase in the size of the orders that you can place on the factory in one lot, and it means a smaller investment and a more frequent turn-over for the dealer who has to carry those goods. Both considerations mount into large sums of money.

We furnish to the manufacturing engineers the specifications for packing methods. We procure for them competitors' products as samples,—not always the easiest task, although it sounds very easy. We give them the specifications for marking the product, always a point of contention and something in which the merchandising and not the factory element is the supreme element.

To give you an illustration of that, we are undertaking to put upon all of our products the symbol number by which we designate them on our factory orders and our accounting forms; and already in the short space of time we have been busy at this we have had articles in the trade press of the country commenting upon our activity in this matter and calling upon other manufacturers of hardware to follow in our steps.

When projects conflict, as they sometimes do because of the failure of schedules, we advise the manufacturing engineers as to the priority of the various projects concerned. We give them certain advice or service in the development of new products, because the men working with us have had very fine sales experience and really know quite well the consumer demand that exists and they also know because they have been making a study of all the points of merit in competitive articles. Starting out as we are, new, without any traditions or any precedents, we are able to combine those points of merit into a single article in a way that few other manufacturers have been privileged to do.

We have occasion to secure field tests on new products in order that the manufacturing engineers may find out whether their work is accurate or if certain new ideas are worth while. We give them specific reports on initial quantities because initial quantities mean allocation of floor space, purchase of equipment and the making of the master plans for the products.

We give them information of the peak load periods, because we may not have to tune up to meet the peak load if it can be forseen and properly planned. An instance is found in the manufacture of flashlight batteries. A battery itself is of compartively short life after it is assembled. But you can make components the year around and store them, and then it becomes a question of balancing the investment in machinery against the investment in inventory to find out how far you need to equip.

We notify them of probable expansion of demand because on their shoulders rests the expansion of any of the shops. We notify them, of course, of the market reactions toward the product. In other words, we play very closely with them. We try to be eyes and ears and legs for them because we get out in contact with the public and with the dealers and they rarely do. We can perform for them a very important service.

We have had a great deal of advertising. One result of that is that we are flooded with suggestions of products that we ought to make, coming from other concerns and a host of inventors; and the sales engineers—I should almost like to say unfortunately—digest that material and pass upon it,—and usually reject it.

The sales engineers and the manufacturing organization do not come quite so closely in contact because the manufacturing engineers really do all the preparation work and all the plannng for the factory, and any changes that may come about will usually come about through the manufacturing engineers and not through the manufacturing organization. But we do give to the manufacturing organization copies of all reports which can be of interest or instruction to them. We search sometimes for outside sources of manufacturing information, and we are particularly lenient in making approval of changes in designs or processes which will help to overcome manufacturing difficulties. And that is where we have one of the prettiest jobs of coordination, because the sales production crew say, "The thing must absolutely be thus and so." The manufacturing engineers think sometimes that they can make it "thus and so." But when it comes down to a matter of taking it out of the laboratory and putting it into the shops, something comes up which prevents its being made precisely as was planned.

We frequently have to hold a joint conference with the manufacturing executives and the sales executives and hold a sort of League of Nations affair while we try to modify the opinions of both until we have arrived at a working program; in the process of time this is becoming a very easy thing to do, and some of the time now both organizations are leaving decisions to our discretion. We have the final approval on products, but we try to carry through that same spirit of cooperation in satisfying both parties.

We give them, of course, the specific reports on marking of products. If any of you ever engage in manufacture such as ours, and have a conception of how pretty it is to have everything etched, and you find out how long it takes and how many tribulations there are, you will be apt to agree that the study of the marking, whether the thing shall be etched or stamped, is a matter of major moment to the factory and of not such great moment to the sales end as at first it seems. There is a lot of coordination to be done there.

We have a very little contact with purchasing. We occasionally do some field work for them to find out were certain vendors of components can be found. We occasionally try to find out where a competitor is getting raw materials. That is only because a flexible field staff has been established in our organization and most of these organizations do not have one.

We have contact with general scheduling. General scheduling makes possible the coordination of all parts in any project. We particularly give them advice on priority of projects. We have some very large charts that cover a good deal of space on the wall. They are the schedules which show every needed operation and the proper sequence of engineering and production and which set up when production shall begin and be completed on various items of each line, and show the accumulative curve of production; and this goes to every part of the organization and if necessary, executive pressure is brought to bear to see that this schedule is maintained, or that very definite reasons are given why the schedule should be broken and a new schedule established.

We also undertake to give everyone concerned certain charts which show the peak load upon any line that we make. That has to be studied more than you would think. We divide our dealers into four classes; towns under 5,000; 5,000 to 15,000; 15,000 to 50,000; and over 50,000. You might say: "Why this close probing?" I happen to have here our schedule on paring knives. In the larger stores in a city the paring knife peak is not particularly high and the load is fairly well distributed. But when you get down to the town under 5,000 you have a peak very sharp and high and not very wide, because in the country towns they do a vast amount of canning and it comes right in the Fall of the year. Paring knives sell like hot cakes at that particular time. They don't sell hardly at all during the Winter months. So you can see that after all there is some real technique in this job of being a coordinator.

Now, I shall close because I am over-running my time a little. I think I have given you enough to think about, but I will just summarize a bit what I have been over.

In the first place, we instituted sales engineering because in our thinking there was a precise parallel between sales and production in the need of setting engineering up as a separate organization, as manufacturing engineers are set up. We therefore separate sales into sales engineering and sales production. We undertake to employ men or assign personnel to these tasks based upon some study of their psychological and temperamental makeup.

I want to point out that there is an essential difference between sales planning from the viewpoint of sales interest and sales training alone, and from the viewpoint of training and interest in sales, production and finance. Our experience has shown us this; that the men who come out from the field of straight sales work rarely make good sales engineers. Some of the men who have developed best as sales engineers have come straight out from factory work; men who have been desirous of getting over into sales work and have been doing some studying and some reading, or, in other words, have trained themselves somewhat but have not had the sales experience; because we find that the knowledge and the contact with the factory is peculiarly vital and that the salesman is very, very slow in accumulating any experience that helps him to establish those contacts.

The results of our setting up a sales engineering organization are briefly these: That we have, as I say, in a comparatively short space of time introduced several major lines of products and are undertaking to do in three or four years what most of our competitors have spent from one to three or four generations in doing. We have no traditions, no precedents, no alliances to tie us down; and that has helped us to work into the problems of standardization as few have ever attempted; and the other people are following in our footsteps. We have these lines and products, a good many of them, well into production now, and with two exceptions we have not had occasion to reject a single one of the things determined upon in the beginning, showing how careful and how thorough has been our work.

And we have succeeded in building up a bridge between sales and factory in an organization fifty years or more old, where the factory prior to the advent to these new products was the dominant power in establishing policies because the product was of such a nature and the sales end had been so long and so thoroughly established, that there was almost no new sales planning necessary.

Therefore, policies came from the factory representing the factory thinking and due to the comparatively narrow limitations of the field and a very remarkable good will that had been built up, this course was eminently successful. It would not apply in any factory newly organized, and to all intents and purposes all of our work on new products is a setting up of absolutely new factories.

I trust that I have given you something to think about, and I have tried to give you something concrete rather than general because I think you can have a lot of fun trying to pick our program to pieces this afternoon.

III. CONTROL OF SELLING OPERATIONS BASED ON ANALYSIS OF THE SALESMAN'S JOB

BY

JOHN M. BRUCE[1]

IT sometimes seems to me that if a man could detach himself from his business, especially the man in charge of the sales end of the business, and take the view of an outsider and ask himself a few questions about the business that an intelligent outsider would ask, it would be a great thing for that business; and I suggest that you get one of your friends who is a good business man but who has absolutely no knowledge of your particular line, and ask him to prove to you your excuse for existence. His effort might be illuminating. The answer to that question is at the basis of sales policies. There are so few people who know why they exist in business.

I do not think you can plan a sales campaign, that you can plan tasks or a reward for the salesmen, until you have decided why you are in business, what you are going to produce, what license you have to feel that you can compete in your market.

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[1] Webb, Kendall and Bruce, New York.

Of course, in the average trade it is easy to compete because the other fellow is floundering just as you are and therefore it is not a very difficult proposition. But it will not always be that way. Therefore, I think the first step is to sit down as an entity detached from your business and try to chart a course for the ideal of that business, finding out what the possibilities are, what its natural resources are, how it can best fit into its field, and what it can do to cover that field in its particular way.

Mr. Freeland has dwelt most interestingly on the coordination of sales and production. I want to emphasize one point in that respect. Most of the lack of coordination and most of the multiplicity of product in the lines in which I have been associated, have been due to one thing, sales sloppiness. The salesman goes out to get an order and unless it is a seller's market finds the buyer is a wary bird and isn't deeply interested in parting with his money for the salesman's goods. The salesman tries to create that interest, and, especially if he is working for a house that maintains a stiff regulation of prices and he cannot make an offer in that direction, he tries to create an interest by giving the customer something special, something that will be unique, endeavoring to create in the customer's mind the idea that the proposed change will give a product all his own or a new line.

When that new number will suit fundamental conditions of his customer's trade and is made to meet a genuine want, I have no objection to it. When that line is made to get an order, and the customer is talked into buying that special feature simply because the salesman has doped it out while he is talking to the customer, then it is a wicked proposition and the multiplicity of such lines may be without end.

I have had occasion recently to examine the sales problem of a sewing machine company. This sewing machine company is one of the oldest and best known in the country. They have a standard model which is as good as any home sewing machine on the market. That model constitutes forty per cent of their business. It ought to constitute one hundred per cent. The other sixty per cent of their business is made up of models made to imitate their competitors' models so as to interest each line of trade that they can possibly reach; and instead of making quantity production of these special competitive models as, of course, their competitors do, they make them in infinitesimal quantities.

Then in the export business which is very large, they have told each customer that he could have not only his own model, but his own brand. The way that those brands are put on, on a sewing machine, and the ornamentation that is put on, means that before the sewing machine is varnished and assembled it has to be branded and ornamented, and instead of carrying the stock of four or five thousand sewing machine heads which would be ample to cover one model or two models, they have a stock of forty thousand sewing machine heads on hand all the time in order to supply this infinity of variation for which there is no excuse except sales sloppiness.

When one looks at the picture of a sales plan in the average company,—and it has been my good fortune to have had the opportunity of looking at a good many of them,—one is struck by the lack of detail in the picture (you might call it futurist). I often think in connection with those plans of a remark that an old friend of mine who was a Maine fisherman made once when I brought him to New York. I had done a good deal of sailing with him on the Maine coast and I asked him to come down and pay me a visit, and among other places to which I took him was that futurist exhibition some years ago at the Lexington Avenue Armory. We paid a dollar to get in and Ben, recognizing the fact that a dollar was a lot of money, felt that it was necessary to see all the pictures before we went out. Unfortunately there were no receptacles which were necessary to his comfort around the place and when he had bitten off an ounce and a half of plug he had to refrain from conversation until he left the building. But he manfully saw every picture and looked at them carefully. After relieving himself in the Lexington Avenue gutter as we came out, he turned to me and said: "By gosh! Aunt Hannah can knit better pictures than them!" I feel that Aunt Hannah could certainly knit better plans than the average sales plans of the average company because they have not even been crocheted.

Now, having looked at the problem from this point of view and endeavored to analyze and picture just what the business is, what lines are the lines of least resistance from your factory production point of view, and coordinate that with the sales possibilities and opportunities, the next step is to translate your finding into the opportunity, for direct action by your salesmen so that they may bring in the kind of orders and the quantity of orders that will make your business a success. And right here is one excellent place to stop and start planning, not what profit will result to *you* from that production, but what *your customer makes* from handling those goods. Or, if it is a direct line, what benefit will he derive from the purchase of those goods. Because no success can possibly result from a company whose dealers or whose customers are not directly and continuously benefited not only by the goods but by the method in which they are sold. The careless indifference of the average manufacturer to his customer's welfare is simply appalling.

The other day a firm of bankers called me in to look at a plant in a middle western city making a standard food product. This food product sells throughout the year, and sells in quantity, but it is an article on which there is a close margin for the dealer, a close margin for the jobber and a close margin for the manufacturer; it is very nearly a standard product. This concern got into financial difficulties as an aftermath of the war, and the bankers called me in to look it over and see if there was any chance of a reorganization which would help them out of their difficulties.

I have never seen such a thoroughly immoral sales program as that company has. It was so immoral that I couldn't see any possible way out for them. I may add that somebody else overlooked that feature and they secured the money to re-finance themselves and are going rapidly ahead again. I may have been wrong, but I don't believe that there is a future in that method. I want to describe it because it is not an extreme case; it is typical of what many of us do unconsciously with a manufacturing proposition.

This concern felt they didn't have enough money to support a sales force, so they put their business into the hands of brokers. The only way they could interest the grocery broker was on a commission basis and with an opportunity of making large bulk sales. The plan, therefore, was laid out as follows:

Despite the tremendous increase in raw materials they have constantly adhered to the ten-cent package,—the ten-cent package, of course, being an attractive seller. When, in the days before the war, they had a ten-ounce carton of the product which was sold for ten cents, they went out to the broker and the broker to the jobber with the proposition that they would give a ten-cent package with as much of their product in it as they could put into it for ten cents and still leave them a ten per cent profit. There was no guarantee of the amount that would be put in, but they would put in as much as they could. But they maintained to the consumer that this carton was capable of holding ten ounces. Of course, they labeled it on the outside with the amount they put in when they packed. But as the carton stands today it is a ten-ounce carton with six ounces in it, and the six ounces isn't printed in any too large type.

The only way that a dealer can make money out of that product is by turn-over. That is the only way that a grocer can make money on anything. That company goes out on the first of June with the sales campaign for the year. They sell through their brokers two or three million cases of this product, with one case in ten free to the dealer who gives immediate orders, and that tempts the dealer to buy. He gets that at no other time, and many dealers fall for it and buy six months' or a year's supply and put it in their cellars. Of course, it is a steadily selling product, but no dealer can possibly make money out of that product under those circumstances, and anybody who knows the food product game knows that I am absolutely correct in the statement that every dealer who buys that product at a price which gives the dealer twenty per cent with one in ten free and buys six months' supply at one time has made a losing transaction.

And it is bad business for the jobber,—he has to load up; and it is bad business for the manufacturer because his sales being at one time, he has to build up his production for a return which comes practically only once a year.

There was a concern with the most ideal factory, the most scientific factory, the most automatic factory I have ever seen, which I believe will inevitably ruin their business by simply immoral business methods; immoral to the consumer, immoral to the dealer, immoral to everybody connected with it.

Having planned a definite sales program, we have to determine that what we want from the dealer and what we want to do for the dealer, we come to the problem of getting the salesmen to translate that to the dealer; and in our usual, slap-dash American fashion of doing business, we base the salesman's reward on his volume of business in nine cases out of ten and then we expect specific results from him. We expect him to do the difficult thing, but we pay him for doing the easy thing; and being human he does the easiest thing. The grocery salesman who is paid for his volume of sales, sells sugar. The typewriter salesman who is paid for his volume of sales and has his exchanges counted in the volume, favors exchanges. He buys old, second-hand machines for his company. He becomes a buyer and not a seller; and I have seen cases where the buying was seventy-nine per cent of the entire business. He is paid a flat commission of 12½ per cent for buying an old typewriter at about twice what it costs to build a new one; then it is rebuilt and sold to the public for five dollars more than the allowance and the 12½ per cent paid to sell it, and we think we have made a great deal of money out of that transaction. You could prove that by any salesman of the company. They infer that that is the profitable end of the business because it is so easy for the salesman.

Just as soon as a new sales policy made it unprofitable to the salesman to do that, the proposition changed,—changed just as soon as the reward was based not on a flat commission but on a share of the net profits on each transaction. In the transaction where there was no profits there was a minimum reward; in the transaction where there was a maximum profit there was a maximum reward. Instead of paying a 12½ per cent commission on a typewriter sale, for instance, the commission ran from $2.50 to as high as $28.00 or $30.00 on a high grade cash sale. The man had to sell so many machines on exchange for $2.00 to make up for what he could get by making cash sales that it became interesting to go out and get a cash sale. Instead of going where the machines were, he got them "where they ain't," and he brought the results in.

There is another aspect to this proposition which must be taken into consideration. That is the quality of imagination. It seems to me that the division between men with respect to their relative capacities, their relative sizes in the world, depends on one quality and one quality alone, granting of course a normal amount of industry to a man and a normal degree of intelligence. I believe that there is very little difference between the normal intelligence of the average man and the maximum intelligence. But I believe the difference in imagination between men is as wide apart as the poles.

The man who makes a mark on the world in any sphere of life is the man whose goal is twenty-five years away, or a life-time ahead. The man who is content to work day in and day out for a goal in the very distant future is a man of destiny. There are other men who will work for a goal five years away. Still more who will work for a goal one year away. They are all big men. Then you come down to the rank and file of men you get as salesmen because you can get them at a price; they have to have their goal directly in front of them. If you can arrange the reward so that a man can make up his own pay-roll every night on the work that he has done for that day and know how much he has made, and if you can train that man to think about being a ten dollar a day or a fifteen dollar a day or a twenty dollar a day or a twenty-five dollar a day man, you have done an infinitely big thing for your organization; you have stimulated the imagination of the little man to the point where he brings in big results; you have given him his reward at a point where he can see it. (And let me say I have never yet seen a business where, by careful planning this daily reward plan could not be worked out.)

It seems to me that the secret of the popularity of golf is that there are eighteen victories or defeats in each round. If one had to play a whole round before one had a score, I don't believe that one man in ten who now plays golf would play. But because each hole is a new contest, each a new day, we are tremendously interested; and we start over again with every hole, and no matter what the cataclysm has been on the past hole or in the past bunker or brook, we start fresh and we may arrive at boggy.

It is the same thing with a man who can be given an opportunity to measure his own work in dollars and cents at the end of each day. There is another slant on that. I think it is far more difficult to get a salesman to make reports than it is to get him to work. But if a salesman in making a report is making his payroll, after he has missed one day's pay by not putting in a report, he rarely misses another one. I can assure you of that.

The analysis of what a salesman should do is a very big factor in the success of a problem. What would you sit down and figure out for yourself? What would you like to do for a customer to make that customer's connection with you profitable and successful? Take the little retail merchant, for example, the little general store up in a small country town. If you could be there yourself and have a direct contact with that little general store-keeper who is struggling along to make a living against all the competition that there is from the mail order houses and from the big department stores in the nearby cities, what would you do to help him, to help him make money on your product? Sit down and figure out what you would do for that fellow and then pay your salesmen for doing it and he will do it. It is simple. I have had cases where I have had a direct reward for washing windows. You will be surprised how many windows ought to be washed in a country dealer's store and if the salesman will wash a dealer's window he has made a friend. That dealer will display your goods in that window. After it is washed, it is very simple to get your product into that window and get the advertising that comes from it. It seems as if that were a great deal to ask a salesman to do, but he doesn't mind doing it if he is paid for it and if he is shown just what it will do for him.

I know that some of the oldest and best friends I have made in my business career are those I made as a cub salesman when I used to work the back country on the Harlem Railroad. I spent many an evening keeping books for the different store-keepers who were my customers in the towns I visited, trying to bring their books up to date for them and get their collections in and show them how to collect. And I don't think that there is any product I could possibly want to sell that those men could possibly buy, that they wouldn't buy of me today. I haven't seen any of them for eighteen or twenty years, but I hear from them often enough to know they have not forgotten the fact that they were once helped.

I like to think of a salesman as a business missionary, as a business teacher; and if a man takes that attitude toward his customers, the attitude of service, he doesn't have very much of a price problem before him. Such a salesman has demonstrated his interest in the customer's business and has shown the customer that his purpose is to make money for him, and that customer will cooperate to make money for the salesman. He never has to argue with the customer at any length on the question of making special products, or has to fight special, finicky notions or make changes in the line to suit that customer's desires, because that customer can be made to recognize the value of standardization; can be made to recognize it every time.

Of course, you can carry standardization too far. It is equally as wrong for a factory organization to dominate its selling organization to the exclusion of new lines for which there is a distinct reason, as it is for the factory to be dominated by the sales organization for the putting on of lines for the sake of getting an order. One is just as bad as the other.

IV. DISCUSSION

THE CHAIRMAN: I think we shall find our most profitable discussion either the direct study of the salesman's job—the job analysis of selling—or the general subject of coordination of sales and factory effort. I am going to ask two or three men to speak, beginning with Mr. E. St. Elmo Lewis.

E. ST. ELMO LEWIS[1]: In facing the problem of the sales manager's job we have the two major subsidiary problems brought out by Mr. Freeland and Mr. Bruce,—sales planning or engineering and sales operations or actual selling. In neither are sales managers today strictly scientific.

When we find an executive of production experience dominating the entire activities of a business, we find, as Mr. Freeland has suggested, an attitude of mind for standardization of the product; on the other hand, when we find that dominating executive one of past sales experience, we are likely to find a multiplicity of products. And if there is no dominating point of view, which is too frequently the case, we are likely to find both sales and production out of harmony. Such a situation, of course, creates immense problems for both production and selling.

The attendance here indicates that the sales managers have come to realize their problem, and are beginning to think about coordinated production and selling, and about how the splendid methods developed by production managers can be of use for the sales managers. I understand the Taylor Society did not expect more than twenty-five or thirty sales executives at this meeting, and there are over a hundred! Such attendance indicates that although it is asserted that nine out of ten salesmen say science hasn't anything to do with selling, there are a number of sales executives who are inclined to push the inquiry.

The sales manager must get more of the factory approach to the problem, the mental attitude of dealing in realities and not merely intuitions, hunches and opinions; and the factory manager must get more of the idea that the business exists, not merely for the purpose of making goods, but for the purpose of making goods to sell.

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[1] Campbell-Ewald Co., New York.

Mr. Freeland's picture of the functioning of a sales engineering department is of the greatest significance. I call it a sales promotion department, but by that term I mean the same thing,—an agency which makes analysis of the market and determines what and how much of it may be sold. There must be more such departments.

I was interested in what Mr. Bruce said about the moral obligation of a business (expressed through the sales department) to the ultimate distributors and to the customers. In Strassburg, Ohio,—which so far as population is concerned is a mere geographical expression,—is the firm of Garver Bros. They run a general store and do nearly a million dollars worth of business a year.

When we see a phenomenon of that kind it pays to investigate, and so I made two trips to see Mr. Garver. What he said to me about the kind of assistance which he receives from the manufacturers of the products he handles ought to burn the left ear entirely off many of them. But he also told about a few who are conspicuously different.

While I was there a salesman come in, walked behind the counters and down cellar, and finally came to Garver with an order blank with entries amounting to some $1800. Garver looked it over and said, "Bill, is that about what I want this time"? Bill said "Yes, I have gone over things pretty carefully," and Garver signed the order. When the salesman had gone I said, "Bill, do you mean to tell me that you let salesmen walk in here and make up your order"? He replied, "That is *one* salesman." But, gentlemen, I will venture to remark that the sales cost of that salesman is lower than the cost of any other salesman that comes into Mr. Garver's store. It wasn't luck, it wasn't charming personality which we hear so much about; it was business sense, cooperation, his firm, which the salesman was selling as much as his goods.

If I had salesmen selling goods to retailers I would insist that every one spend one day a week selling goods behind a retailer's counter,—and not entirely his own line at that.

THE CHAIRMAN: I am going to ask next the man who was the author of the resolution which calls us together to give us more in detail just what his problem is and what this study of the selling problem means. I want to call on Mr. Crockett.

CHARLES B. CROCKETT[1]: When Mr. Taylor brought scientific management to the attention of the producing end of our business, he brought, I suppose, the most wonderful thing with which business has come in contact in many years. It has opened the eyes of business to really scientific and sound efforts. But at the same time he brought a good deal of trouble to the sales department because we salesmen are the most confirmed guessers in the world, and scientific management and scientific selling do not permit of guessing.

So we are up against it right now. Our factories are rapidly putting in scientific management, and my sales department—I don't know how yours is—is suffering because the firm has spent all of its energy getting the producing end down to the finest scientific details and has done nothing to have the sales department function in that same scientific manner.

The result is, that the scientific methods adopted by the factory are actually handicapped and retarded because the sales department is really a wild bunch of mustang ponies unbridled, uncontrolled, and with no idea whatsoever of science in selling.

The chairman has said that I am responsible for calling this meeting, and I think I should explain just why I am interested. For six years the firm of which I am the sales manager has been developing scientific management in its production end. And all of a sudden, now that we are stepping out of a seller's market into a buyer's market, we find the sales department up against a serious problem because one of the aims of scientific management in factories is continuous work and continuous employment.

If that is the case we must sell continuously. We must sell everything that the factory can make; and from that angle alone I went to the Rochester meeting to find out what members of the Taylor Society had done, if anything, towards injecting scientific methods into the sales operations, if for no other reason than to help out the manufacturing department.

But I found that nothing had been done. I found that every one of the manufacturers represented there was groping and eager to find help, just as I am. So I suggested that at some time in the near future, this Society call together those interested in selling,—not to talk in generalities, but to talk about what our job is as sales managers to properly fit sales in with scientific production, because we cannot be successful sales managers if we run wild while the manufacturing department is on a scientific basis.

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[1] Sales Manager, The Printz-Biederman Co., Cleveland.

And that is what I hope this afternoon will be devoted to,—not generalities, which we have read in books and papers all our lives and which do not get us anywhere. Let us get down to cases, because I want to carry back with me certain definite ideas which will help eliminate the guess out of my department.

I recognize one thing; no sales manager can be a real sales manager if he does not understand and fit in with the methods of production. We who are sales managers must quit thinking of anything else for the time being and find out what our job really is. Let us not talk about stunt selling. Let us not talk about stunt advertising. We want to find out what our job is in a business where production methods are scientific; then we can pass on the details of efficient selling to our sales people.

As I see the sales manager's job, it is twofold. He is directly related with production and he is directly related with distribution, and he has to be big enough to function in both directions; for that reason I am interested in two things from the standpoint of production, because my firm will make anything I tell them the sales department can sell, and they will make it in any quantity. The article itself and the quantity are up to me. And what do I know? I may go back and see what we did last year, and I may see whether the crops are good this year or not, and upon such basis I may guess at what the factories should make for 1920 or 1921, but I must quit that guessing. I want somebody here to tell me how he is determining; first, the articles themselves whether one or half a dozen or more; and second, how you scientifically find out the quantity you have a right to expect the financial department to buy and the factory to produce. Those are the two points that I as a sales manager, functioning with a highly organized and scientific production department, want to get some light on from the Taylor Society.

I know that one of the fundamentals of successful factory operation is continuity of employment. In our factory we have 1,300 people making women's clothing, the most treacherous of products, because there is that style question,—the style is liable to die before the sales department gets the finished product to sell.

I want to know whether any of you sales managers have figured out the methods of selling against continuity of employment. That is the major point with regard to our relation to production. When it comes to distribution, there are several things. What are you doing to analyze the market? What research work are you carrying on to tell with some degree of assurance what the potential market is?

What are the sales managers doing to educate their salesmen upon the policies of the house, and what are they doing to enable the salesmen to pass that knowledge on to the customer? Do you think that salesmen can be built or are they born? What is the consensus of opinion of the men who are interested enough to come here, in the value of sending out,—if we can send out —men who will properly represent us; and if we can, what are the best methods of putting them in a condition to properly represent the business? I want to know something about the tasking of men. I task my men. It is a guess task and that is wrong. Some of you may have figured out a scientific way of tasking a salesman. And after you have tasked him in what way do you see that he performs in accordance with his task? If he doesn't, what do you do? And if he does, what do you do? Those are the things, Mr. Chairman, on which I am hoping that we can centralize our thought.

THE CHAIRMAN: It strikes me that we might do a lot worse than to follow up Mr. Crockett's challenge right now.

D. E. BURCHELL[1]: I am going to contribute to one only of these points. Regarding the analysis of sales, we take particular pains in this way: We have a cost system,—and most concerns are working toward that with considerable speed,—which costs our invoices by articles. We punch a card for every item we sell by size, weight, cost and selling price; and we furnish our sales manager with a complete analysis of the production, the sales, the cost, the profit and the percentage of profit on every grade of paper sold during every four weeks of the year; and the same thing regarding each and every customer who buys above a certain minimum amount. We have it for every sale of the year, absolutely and complete. We have it for every customer of any importance, or for any customer under study. This gives the sales manager definite, dependable information on which to base policy and methods.

THE CHAIRMAN: Has somebody else an answer to one of the thirteen questions, I think, that Mr. Crockett asked?

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[1] Comptroller, Eastern Manufacturing Co., Bangor, Me.

Morris L. Cooke[1]: I don't know that this is exactly in line with your suggested program, but I see Mr. Percy sitting here from the Clothcraft Shops, and I believe he can give us something.

I recall about six years ago, I think it was, a remark of Mr. Richard Feiss, member of this Society and the manufacturing manager of that plant, that there was a great demand for their goods at that time, and the sales force wanted to know why they didn't double the size of the plant. Mr. Feiss said that his reply had been that they wouldn't increase the size of their plant until they had a selling force that was able to sell the product of their plant good years and bad years, in season and out of season, because they considered giving continuity of employment first requisite in any manufacturing plant.

It seems to me, that in developing a scientific policy for sales, the effort should be to get as many as possible generally accepted principles, or laws if you choose to call them that; and as a little contribution to the discussion I want to suggest that this Society in advocating a sales policy must make continuity of employment absolutely fundamental.

About a week ago I brought together here in New York a group of production engineers to discuss the one matter of routing, and we argued all day long at the Engineers' Club, and there was only one unanimous conclusion: that there is no use scheming out a system for routing in the clothing industry unless we are going to assume a responsibility for giving continuous employment, because otherwise scientific manufacturing is impossible.

In my own thinking I arrive at the same conclusion —that there is no use scheming out a sales policy unless fundamental to it you make continuity of employment.

Charles E. Percy[1]: I came here primarily to listen because our sales problem during the past three or four years,—I don't know how long it was since Mr. Cooke talked to Mr. Feiss,—has been entirely one of holding salesmen back. We have been selling goods on an allotment for some time, and the clothing business is still in the seller's market. But I am very much interested, and one of the principal reasons I came to this meeting is to get help towards an answer which I know I must reach in a very short time, an answer to the question of spreading our sales over a longer period.

I don't know how many of you men realize it, but our entire output for the Fall of 1920 was sold in four weeks. Our entire output for the Spring of 1920 was sold in four weeks. I have a sales force of nineteen men who have travelled this year just eight weeks, and they are all pretty well paid men.

I have the problem of what to do with those nineteen men during the other forty-four weeks in the year. I haven't any great selling problem to tackle just now, but I have a problem coming of how to spread our sales throughout the year, and I feel personally that where I am going to get the most enlightenment is where I can get someone to tell me how to change the commission basis of selling to a more practical basis of compensation. I am hoping that before this meeting is over I may hear something along the lines of compensation. I have been working on that for a long while, and practically I don't get anywhere at all.

We have the big problem, not so much of selling our goods, as of how we can use our men throughout the year to sell business prestige and keep our organization before the retail clothiers of the country. That is the one big factor that I have to contend with; the question of getting the men to sell the institution rather than the clothing.

From the Audience: I believe our Chairman is too modest; I am quite sure the Dennison Manufacturing Company has been able in the last few years to smooth out their curve of production through their sales, and I think the Chairman has something to tell along that line.

Henry S. Dennison[1]: I can say that the principal part of the work of smoothing out that curve of production has been a selling job. It consisted, in the first place, of getting our selling department so organized that there was immediate and close contact with every part of it. We had about 250 salesmen scattered all over the world. The first problem was one of organization which we followed out on the district principles,—having a fairly large number of centers of selling—with the district manager really a working manager; that is part salesman and part manager who spent something like half his day in the office and the other half and sometimes a good deal more actually selling.

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[1] Consulting Engineer in Management, Philadelphia.

[1] Sales Manager, Joseph & Feiss Co., Cleveland.

[1] Dennison Manufacturing Co., Framingham, Mass.; President of the Taylor Society; Chairman of this conference.

Then, having sufficient general sales managers right at our headquarters in close contact with the factory to cover those district managers, we aim to give them the service that they require. We had been working for some years eliminating the commission system. Our men are paid on salary entirely. The records of their service and of their work were perfected steadily,—I used "perfected" in a very loose sense because we are a long ways from perfect yet,—until we at this point were ready to definitely sell to them the idea that goods which were thought to be highly seasonal—Christmas goods—could be sold steadily the year round.

And one of the devices which we found of great value,—after proving by trial in one or two places that it could be done, so that we weren't asking for an impossibility,—was the device of concentrating a few salesmen upon a given district and seeing that they did the job. And when they did it in their district, convincing the rest of the selling crew that they could do it was almost automatic.

In most of our attempts to control the selling operations we have used that device; first making ourselves sure by experiment with the best salesmen that the proposition was possible, that we were approaching it in the right way, and then focusing our efforts upon the run of salesmen, taking the average ordinary salesman in some one typical district and starting him going. After we had done that in several districts, and they had become the best advertising material to the rest of the selling crew, we were ready practically to give instructions that such and such a policy should be followed out.

That has been the course in many of our other policies. We have changed gradually in the last fifteen years from a free-price policy, any salesman making pretty nearly every price he desired, to an absolutely fixed, uniform price policy. That was a very slow course, which depended upon the closeness of organization of the selling end, and was worked out step by step, very much by the method that I have indicated.

There was one point that was brought up by Mr. Crockett about which some of you must have something to say. That is the education of salesmen. How do you educate a salesman? Can anybody start us on that?

J. Passmore Elkington[1]: In response to your last question, I can simply say that in selling silicate of soda, which is a heavy chemical, we have been furnishing to the salesmen essays on each use, which the men carry in bound form for ready reference. Also, each month we send out to them a quiz on some use of the product which they are expected to answer on company time, and the replies to which are graded and summarized in sales conferences.

If I may, while I am on my feet, I would like to contribute another question. I wish some production engineer would tell us concretely how to analyze the salesman's job. Do you call travelling to the depot part of his job? I confess that I am so unlearned in Taylor management that I need some light on that. How do you begin to analyze the salesman's job from the time he leaves the office until the time he gets back, so that you have details to work upon,—not merely the gross results of his work?

The Chairman: We have found that we were spending too much time in the education of salesmen on how the goods were made and what they were made of, which is of really quite secondary importance. It is what they are used for that is really of value in the distribution end.

Mr. Crockett: Let us stick to the sales manager's job. I want to know more about *my* job. I don't think that sales managers realize just what their job is, and that job is getting to be very difficult in these days when it is a buyer's market instead of a seller's market. Let us find out what our job is from a scientific standpoint, and then we can thrash out the details.

From the Audience: I don't believe that a question such as Mr. Crockett has asked can ever be answered in a meeting of this sort. I believe the only way you can get down to anything of that sort would be to have a questionnaire made up by a committee so that all the points that are bothering the sales manager could be brought out.

The Chairman: I see Mr. Crockett quite agrees, and several others who also seem to agree. If it is conformable to your wishes, Dr. Person will manage to get up at least the beginning of a questionnaire—naturally with the help of some of you who are near at hand here. We have been a bit questionnaired to death in the country. It is your own suggestion however. Will you here agree—we will use this registration list of you who have come—to do your very best to give the information sought, which we will put in some sort of shape and send out to you? (Agreement was indicated by show of hands).

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[1] Philadelphia Quartz Co., Philadelphia.

Willard E. Freeland[1]: Two or three questions have been raised that have interested me greatly. We are hiring a lot of service men because our salesmen are too busy to do service work. If I had salesmen loafing forty-four weeks out of the year, the dealers handling my goods would have the greatest service ever handed to dealers. The place where you stop is at the retail counter, and all of the selling in the big Winchester plant is based upon the theory that we can teach the dealers' clerks how to sell our goods. We are not worried about our own salesmen. We are worried about those retail clerks. If you have any time of your salesmen on your hands, send them out to instruct the retail clerks of this country.

The other question concerns continuous employment. You go ahead and make only one line of products. Have you ever stopped to study whether you could make anything else or not? I mentioned in my talk this morning the making of batteries. If we made batteries only when there is a call for them, we should make them all in November and December. What would we do with that big bunch of girls the rest of the time? We are going to make fishing tackle. If that doesn't suffice, we are going to find something else. We are not going to let those girls go adrift if we can help it.

When you talk about making a single line of product, perhaps that is the mistake you are making. You may be making Princess clothes when perhaps, you ought to be making aprons part of the year. You who are talking about scientific determination should get down to such basic facts; that is coordinating production and sales.

Mr. Crockett: I don't want to let him get away with that. If fishing tackle were to go out of style next week, you would have something so difficult that what you have said doesn't point the way out. We have tried to fill in our idle period. Our idle period is in May. We are through with our Spring production. It is entirely too early for Fall goods. If we make something for Fall in May, the style is passé by Fall. By the way, I suppose in the women's garment industry our factory is the only one that has scientific management, and we produce 4,000 garments a week fifty weeks in the year, whether the sales department can sell them or not. So our sales department have a man-sized job.

If the Taylor Society can be of one service more than another, it can repeat its service to production by teaching sales managers how to approach their problems.

Charles P. Staubach[1]: Mr. Crockett offered one question which it seems to me can be readily answered, and will interest most everyone no matter what his line. I refer to the single item of company policy,—how to get your men lined up with the company's policies at all times and fully informed as to what the company's policies are.

I believe that it is quite customary as new policies are made up or old ones changed, to issue those instructions in something similar to forms or circular letters. They are observed for the moment, and then as time goes by they are overlooked; and as new men come on who have never received some particular line of information, we find a sale is made contrary to company policy.

We have solved that in a very simple way by the institution of what we may call a decision book. We have a printed decision book which is in the hands of everyone in the selling force and of all executives and officers.

When a circular letter of any importance is issued and the matter is a settled company policy, it is made permanent by putting it into the decision book. It is a very small book which may be kept in the hip pocket. The book is classified; one portion has to do with shipments, another with terms of sale, another collections, and so on down the line, paragraph by paragraph, properly indexed and cross-indexed, and making permanent the decisions of the company, and making it possible, too, by means of stickers to bring those decisions up to date periodically.

It seems to me, if you want to line up your men on what is company policy, the new man as well as the old man, the adoption of a form of decision book is really a very simple and practical thing. We have after twenty years experience found it works absolutely to perfection.

The thought behind it all is that instead of waiting until something happens to cause friction because of ignorance on the part of the salesmen, you have that particular subject taken care of in advance. You can foresee most of such problems, and a decision having been made, it can be promulgated and kept permanently before those concerned until it is changed. In that way, the new man who comes in tomorrow will have an opportunity of knowing what the company's policies are as well as the man who has been with the firm fifteen or twenty years and has been absorbing them all of that time.

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[1] Sales Engineer, Winchester Repeating Arms Co., New Haven.

[1] Agency Manager, Burroughs Adding Machine Co., Newark, N. J.

If anyone would like to have the benefit of the Burroughs' idea on that decision book, the easiest way to get it is the next time a Burroughs man drops in to see you, ask him to show you the decision book which he has in his pocket, and you make notes from it and build up something from it if you haven't already something like it.

Carl G. Barth[1]: I have this suggestion to make: that in the manufacture and marketing of such products as style goods, it may be impossible to eliminate guessing; but is at least possible to have it understood that the management should do the guessing and within the management a functionalized department should do it. Then you won't have departments guessing against each other.

A. H. Cubberly[2]: One thing that may be accomplished by scientific management in the factory is to reduce the cost per article and to speed up the delivery. One of the greatest services that the sales force can possibly give to the factory managers would be to tell in advance what they want to have made six months from now or a year from now. It would be possible for the sales manager to send his men out when they have any idle time,—and they may do it by working behind the counter, if you please,—and gather statistics and feel the pulse of the people, so that they can come back and say: "If you will do a certain thing,—it is only a slight change,—you can sell a large quantity of a certain article." The future estimate of the articles that should be produced is a big contribution that can be made by the sales department.

Mr. Freeland: It has been the custom for the Winchester Company for many years to tell the factory on the first of July of any year exactly what they are going to want on every item for the following year, beginning with the first of January. On the first day of October they give the factory the complete detailed orders for the month of January. We make our adjustments as we go along. If that first thing is wrong, we can adjust it in a later month. This year because of the critical steel situation, I gave the factory the estimate for the entire year 1921 on the 15th of March, and we are covered on steel for 1921 at the present time.

Mr. Crockett: Is your production department elastic? Can you produce more or less in accordance with your *actual* performance,—not your anticipated plan that is made six months before? How do you regulate either your selling to fit production or your production to fit your actual selling? Where is the elasticity?

Mr. Freeland: The elasticity must be on both sides. The sales organization, for instance, finds something that they can run wild on. They will, if left without control. We have occasionally to say to the sales department that their quota stops right there. They have to call the salesmen off on that article. On the other hand, we have to say occasionally to the factory that they must speed up. But we don't ask them to speed up on a week's notice, because we do not, of course, run into as fast a style change as you have in the clothing business. You are up against one of the more difficult of all the problems, and your contact with the factory must be closer than ours, unless you can bring about a better standardization than you now have. That can come about, I believe, only by cooperation within the industry; cannot be effected by a single concern.

The Chairman: I should like to add my word to Mr. Freeland's; that we have found it most desirable to have elasticity at both ends. We have found it necessary to study the limits of that elasticity in order to know how far the factory can enlarge and how far we can demand elasticity from the selling end. And, of course, in recent times we have very frequently met the limits of the factory elasticity.

Mr. Cooke: There is someone here from the W. H. McElwain Co. I was told four years ago that they had four salesmen on the road who never sold, but were out acquainting themselves with conditions; one of the officers told me that was a very important matter.

John A. Urquhart[3]: He probably referred to the merchandising control men. We have a very careful merchandising control system with our own houses. We are subject to the same fluctuations as all other concerns which sell direct to the trade or to independent wholesalers.

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[1] Consulting Engineer, Philadelphia, Pa.

[2] Industrial Engineer, DuPont de Nemours Co., Wilmington, Del.

[3] Methods Dept., W. H. McElwain Co., Boston, Mass.

Our company has had continuous employment for a great many years. We effected that by storing more or less. We have our business divided into three parts: a series of wholesale houses controlled by the company, independent wholesalers, and the larger retailers,—three selling groups,—and at the beginning of each season they hold conferences with the salesmen to get estimates on what they are going to sell. We take our entire factory capacity,—it is figured on six distinct manufacturing processes. We take the total capacity on those six processes and even it up right through the twelve delivery period for six months, each month being divided into the two delivery periods. Then that total factory capacity is divided into the three selling groups, and the salesmen go out on the road and sell against that capacity. We keep them informed by reports practically every day as to just what the capacity is on each block, so that they can bring their weekly reports up to date. We show them each week the number of dozens of shoes they can sell, of each distinct type for each delivery. In addition to that we get estimates from these various salesmen for the different kinds of stock which is going to be required, and we keep a record right through the season as to how the stocks are selling by deliveries. Our whole plan is based on tieing up factory capacity with our delivery system to our salesmen.

THE CHAIRMAN: One point was brought up a while ago in which I happen to be particularly interested,—when one of you gentlemen asked if we knew the salesman's job in detail.

We have in our concern a reasonably good department devoting its continuous attention to the problems (we never solve any that I know of) of coordination of selling and production. In January, I think it was, we had a sales conference on the assumption that by next November we should very much want to sell some goods. We have all been, for the last three years, simply finding out what kind of a check-rein would stop salesmen from selling, and how to check the customers, and how to cut their orders without cutting their good will in the bargain. But we felt that by next November, perhaps, we should need to *sell.* We had a conference to see that we were thoroughly covered in every conceivable direction,—if we were ready for the advertising, for necessary new goods, and so on.

One of the striking things in that conference was that we were all talking glibly about the salesman's job, and that there were no two views of his job, in the room of fifteen people, which even resembled each other. So we decided to try to find out the nature of the salesman's job, and to subject it to Mr. Taylor's method of job analysis,—time study, if you please.

Our first reports,—on an apparently typical salesman, although we realize we must do twenty times as much work before we have any thorough results,—show that forty per cent of his time is spent in travel. That is a pretty expensive investment. If we found in the factory forty per cent of any workman's time spent in walking around and getting the material and getting ready to do something, we should say there is a great opportunity to save and get bigger production. The chances are you can save a good chunk out of that forty per cent. We found also that sixteen per cent of the salesman's time is spent waiting for an interview; fifteen per cent is sales conversation—selling; and six per cent is miscellaneous conversation. Only fifteen percent in actual sales conversation!

Many a time when we started the same kind of a job in the factory, we thought we might get fifty per cent increase and we frequently actually got one hundred fifty per cent. And Mr. Barth can tell you bigger yarns than that. Now, if in the selling end we can't get by this thorough analysis, similar very material increases in results over what we used to have, it will be a very unusual and a very strange experience for us. Every time we have tackled such a job we have found we were awfully bad and could make great improvement.

HENRY W. SHELTON[1]: I am particularly interested because I was a salesman and sales manager for six or seven years before going into production work, and went into production work because I found from sad experience the lack of coordination between the selling and production. I hate to think nowadays of some of the crimes committed as a salesman against the production side. And since then I have equally suffered under the crimes which salesmen have committed against the production side.

It seems to me that there are representatives here, probably, of a number of different kinds of industry, and that one of our difficulties is that we are talking more or less in different languages. That is, there are some of us who have the problem of manufacturing to order. Others manufacture to stock. Others manufacture style goods. Others manufacture articles with respect to which, perhaps, the prime problem is educating customers in the new uses; and so on. Then there are those who have the metropolitan sales problem, and those who have the national sales problem. The sales manager's problem that Mr. Crockett is interested in is going to differ in very important ways from the problems of other sales managers.

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[1] Consulting Engineer, Philadelphia.

Therefore in regard to that questionnaire, I feel that we may get into difficulty unless we do something in analyzing the kinds of sales problem which we have to face, possibly by industries or in some other way that your committee may undertake. I would like to suggest that point.

Another general point seems to me of importance. We are apt to think of the salesman as a distributor of that which the production side has produced. I think if to that thought we should link up the thought of the salesman also as a collector, we should get a better balance respecting the salesman's true function. That is, the salesman is not only the distributor of the goods which the factory produces; but no less should be and could be a collector of information from the whole territory and field, on the basis of which the factory can produce better and more constantly. And to organize the means of collecting the right kind of information through our sales forces, is quite as much of a problem of sales management as that of how to sell the goods which will keep the factory continuously producing.

H. S. Person[1]: In the call for this meeting the specific inquiry was made whether there is anything in the experience of the application of scientific management methods to factory production which can be carried over and utilized in the selling end. It seems to me we can help ourselves by analyzing the major elements in the production technique, and then asking whether there are analogous elements in the selling field.

The first major element in the production problem is analysis, constant analysis, of the production requirements, processes and progress; and in the course of such analysis the accumulation and filing of data—ultimate unit data—concerning every possible production operation. These data, if properly collected, are sound and usable in different combinations, as new production situations (different kinds of production orders) come to the department. Query number one: Is there a similar element in the selling problem? I have always believed there is, and Mr. Freeland's talk has made that belief a conviction.

Another major element in the production problem is as production orders come in, to lay out detail operations to meet the requirements of those orders, in advance, and to direct and control the operations,—not leave them to chance. This is possible in part because of the accumulated dependable data referred to above. Query number two: Is there a similar element in the selling problem? I think there is.

A third major element in the production problem is to establish and maintain standard conditions of operations; so that when it is directed that a certain thing be done, it will be done in accordance with directions, under conditions which may be relied upon, and with results which are calculable in advance. This is possible because the data on file have been collected under all conditions, and related to the conditions which are maintained, and may be combined in calculation in accordance with the conditions surrounding the operations being planned. This establishes control, which produces results in accordance with the control. Query number three: Is there such an element in the sales problem? Again, I believe there is.

You may say I am pretty optimistic. I acknowledge that; but it is from optimism that experiments come, and from many experiments at least a few concrete results worth more than the cost of all the experiments. You may say that investigation and analysis is of course a problem of selling; but when it comes to such a standardization of conditions and control as has been developed in production,—the thing is impossible in selling. I believe some advance in that line is possible, however, and that is what we are here to inquire about.

The big problem in any business is not merely to coordinate production and selling, but to coordinate all along the line—production, selling, and the demands of the market—so as to give the selling department as well as the production department,—if not stable conditions at least unstable conditions which are calculable.

Analysis of the elements and the collection of usable data is certainly practicable; precise control of the selling force seems practicable; the big problem is to work out such a variety of products and such contacts with the market as to establish situations which may be anticipated, which will give continuity of adjusted production and selling operations. That will give continuity of employment, low costs and increased competitive power.

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[1] Managing Director, Taylor Society, New York.

From the point of view of organization it seems clear that the engineering (analysis and planning) function should be distinct from the selling (in the narrow sense) function. Whether conducted by different departments or individuals depends upon the size of the business.

Herbert A. Burns[1]: Would it not be well to eliminate one thing from the sales manager's job, and that is gathering the statistics as to what ought to be done? I feel that Mr. Freeland's idea is correct, that the sales engineering department should not come under the sales manager. In the information Mr. Crockett gave to us he indicates that it is up to him what plans should be made. Ought that not be left up to the sales engineer and not the sales manager?

The Chairman: It might be a definite service if we should just indicate how we feel about that. My own feeling was made quite clear at the beginning. I have indicated that our own departments of sales planning and sales operating whatever you might call them, are distinct, I am sure I should be interested to know by show of hands how many believe that those two functions are separate, and how many believe planning should be combined with the sales management. (A show of hands indicated that thirty-one believed the functions should not be combined in the sales manager; twenty-eight that they should be; about fifty participants not voting.)

John H. Williams[2]: They must, of course, be coordinated.

The Chairman: It doesn't mean that in a small concern different persons manage different departments. In a small concern one person may be responsible for the two functions. But they are distinct functions.

Sanford E. Thompson[3]: It has been my experience in large organizations that there is always more or less conflict between the sales and the manufacturing which brings out the importance of the coordination that Mr. Freeland suggested.

There is another point that hasn't been touched on specifically today, and that is the complications which scientific management in manufacture introduces into the sales organization by enabling the factory to turn out so much larger production. Scientific methods do not have their full benefit unless they result in larger production. With the increased production we must have the larger sales.

We are often vexed by superficial industrial engineers at the present day. We are vexed nearly as much by the engineers who have good intentions,—whether they be engineers from outside or whether they be engineers associated directly with the factories,—who strike the high spots only. Sales have been tackled so far with a few exceptions in the same general way as the superficial industrial engineer tackles the production problem. The high spots only are tackled. We have bonuses, quotas and what not, based on guess.

In manufacturing, there are certain fundamentals necessary, as Dr. Person has suggested. We must have a definite control of the manufacture through the factory, something which very few factories have at the present time in sufficient detail. We must have this through job analysis and through standardization.

We also have similar fundamentals in sales and it is equally necessary to attack those fundamentals. We must plan out the work.

There is great danger of perhaps a large number of the men in this room not fully appreciating what job analysis means and we have found and we shall and more prominent, cases of tackling it from the standpoint of establishing bonuses on sales without getting at the fundamental conditions. Mark my words, that is going to happen. You are going to have just the same conditions in developing sales as have been experienced in developing production; the attempts to touch the high spots, to establish piece rates and so on without thorough study.

Mr. Freeland's paper was wonderfully interesting. We must not lose sight of the fundamental principles he brought out, and the most important of all is this engineering analysis as in a production department. It seems to me the biggest job of the sales manager, where you do not have this extra sales engineering department,—and in a small factory at times it will be necessary to combine the two functions in the same man,—the biggest job of the man, whether he be called a sales manager or whether he be called an engineer, is to get at scientifically determined fundamentals. In the first place, to study the conditions, various things that have been talked of today; in the second place, to develop these things through control and analysis; and in the third place to provide for the maintenance of these standards. This sounds theoretical, but you have got to get down to what are really the fundamentals, or we shall never get anywhere.

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[1] Production Manager, New Home Sewing Machine Co., Orange, Mass.

[2] Consulting Engineer, New York.

[3] Thompson & Lichtner, Consulting Engineers, Boston and New York.

WILLARD P. BARROWS[1]: It seems to me that the great value of the selling force as an organization to gather information and bring it to the factory, has been lost sight of.

I recall an experience I had some years ago with a concern in bankruptcy. I was receiver and it was up to us to prove our reason for existing and for the court allowing us to continue in business. It was a very reputable concern, and made a very large line of silver goods; I found we were making a very great number of articles,—perhaps four or five hundred,—and that this number was increasing yearly; that although the number had been objected to very strongly by some of the management, they had never eliminated any lines; nothing once begun was ever stopped; and the salesmen, of course, were very glad to have the factory make anything that any of their customers wanted.

I did this: I had a list prepared of every article we made, and I had copies of it made with each article numbered. Then I prepared a list of test questions, about thirty I think there were, calling for such information as maximum bullion and labor, minimum bullion and maximum labor, the salability the year round, stability of design, etc. I submitted to each of some twenty salesmen and shop men this list of articles and this list of questions and requested that they check off on each article where it met the requirement of a certain question and that they be prepared to state the reasons why they had made that report. Everyone responded. We got from twenty to thirty complete reports on all of those articles; they were tabulated and I found whether tea balls had met so many requirements on an average, and whether a certain kind of spoon or something of that kind had met so many requirements.

Then, after we had analyzed this and gone over it, we called a conference and discussed the various things. I will venture to say that the management learned from this series of conferences more about the conditions of trade through the country, about the different articles that were made, the good and bad points, than they had ever known before. This resulted in the elimination of about two-thirds of the articles.

That was only the beginning. It was just stabbing, that is all; but it was a beginning which enabled us to go on and collect data and tabulate them and keep them where we could get at them. That is an illustration or example of education of the salesmen. The salesmen lived too far away from the plant. They don't know enough about it. The management doesn't know enough about the salesmen. The salesmen live in the atmosphere of the customer.

NORMAN R. HOOVER[1]: I have been waiting all day for something permanent to come from this conference. Why can't we organize some kind of a sales managers' association, or club, whereby we can meet from time to time and work the problem out?

E. ST. ELMO LEWIS[2]: I think we might do something such as the gentleman from the American Chicle Company suggests. I move you that it is the sense of the conference that four committees be appointed and report at a conference to be held at the call of the Society in the Fall—that is, in October or November, somewhere along there—on the following subjects: (1) Selection and education of salesmen; (2) the organization and functions of a sales engineering or planning department; (3) sales quota, methods of determining and putting it into execution; and (4) a committee on the organization and function of the sales department. I should have those four committees make reports which can be mailed to the members of the conference in advance of the meeting and then we shall have something definite to discuss.

THE CHAIRMAN: Inasmuch as this is, so far as I know, the first meeting of sales managers which has been called to attack the problem from this particular angle,—namely, what can the sales manager learn from the production methods of the factory?—

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[1] Counselor in Management, Philadelphia, Pa.

[1] American Chicle Co., New York.

[2] Campbell-Ewald Company, New York.

I am quite confident there may work out a technical section relating to sales of the Society which called this meeting.

You have before you a motion instructing us to appoint four definite committees to report at a meeting of this sort to be called in fall. What is your pleasure?

STUART COWAN[1]: I realize that this is a meeting of sales managers and men interested in selling. But I have been surprised today to listen to a discussion in which the question of advertising has hardly been mentioned.

Here, gentlemen, is one of the biggest forces in business. It is a greater force than the personal selling of salesmen. Why? Because it gives salesmen an opportunity which otherwise they haven't got. I would like to ask Mr. Lewis whether he wouldn't like to include, in view of the importance of advertising to modern industry, a committee to study the relation between advertising and selling so that this question when it is taken up will be taken up as a whole in true engineering fashion?

THE CHAIRMAN: I may say in reply to Mr. Cowan that the call for this meeting proposed to attack the sales managers' problem from a particular point of view. Advertising has been pretty well studied and the results pretty well published; and it is not felt that we are as much in the dark with regard to the possibilities and methods of advertising as with regard to the possibility of sales management independent of advertising. It is the desire at present to concentrate on the special phase of the problem.

MR. PERCY: I happen to be the secretary of the only sales organization that was ever started in a national way, one that was organized in St. Louis three years ago; I also happen to be advertising and sales manager of our organization. Frankly I was keenly interested in this meeting because it was to approach this subject from a narrower point of view than is customary in the usual sales managers' organization. I would be personally in favor of an organization, but I should like to see that organization a branch of the Taylor Society. I should like to see us confine the plan to just how one can apply scientific management to the sales department and not get off into a national organization of sales managers which means jobbers, managers and every other kind of managers, and will spoil the whole thing.

(The motion for a Fall meeting with committees and reports was carried unanimously.)

THE CHAIRMAN: Has anyone any further contribution to make?

MR. FREELAND: I often wonder whether some of our fundamental troubles in sales are not due to the fact that we have not applied one of the first principles of Taylor management,—getting the right man in the right place, a very fundamental thing. I want to say a word about how we are approaching that problem. We conceive of every task, regardless of its nature,—this applies throughout our whole organization,—as breaking down into five elements or functions,—planning, preparation, scheduling, production, inspection. Now with respect to the organization of each of our departments, we take a man who has a creative visionary make-up and make him a planner; the fellow who has instinct for getting things ready and make him a preparation man; a man with a highly developed time sense and make him a scheduler; the man who is successful in removing interferences and handling personnel and make him production supervisor. And we take that fellow who has a love of detail and close observation and the ability to be tactful and make him our inspection supervisor, and one of his big jobs is the maintenance of the standards of the organization.

If you will do a little thinking along those functional lines and look over your inside organization, you can begin to do a little selecting with that thought in mind,—that here is an ideal planner, here an ideal scheduler, and so on; and you will find yourself making unmistakable progress when you begin to pick up a specific man for a specific phase of your general task.

JOSEPH B. CLARKE[1]: I cannot conceive how you can get a sales engineer and a sales production man to function in the one person.

MR. FREELAND: You start out with your men in the elementary stage, your foremen in your shop. Gradually you find a man who instead of being strong in one function is strong in two or three or four, and finally you find the man who is fairly strong in all five. He becomes your major executive. If your sales manager is not strong on all five you haven't a sales manager.

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[1] J. Walter Thompson Co., New York.

[1] Asst. Gen. Supvr. Planning, Du Pont Co., Arlington, N. J.

Joseph B. Clarke: It has been suggested that in the case of a small organization the sales engineering would function in the same person as production, to the end that he would dictate to the factory. It seems to me that is putting the whole thing up to the sales department.

Mr. Barth: My profession is to point out functions in a great many plants. It is one disadvantage of a small plant, that you have to put in one man more than one function. You have got to put up with it. But where the organization is big enough to have one man for each function, that is the way to organize.

M. S. Eylar[1]: I came here today to get some information concerning the salesman's job,—how you can lay it out, which means, of course, the sales manager's job. I believe that the quota is the foundation stone,—call it quota or whatever you like,—but it is fundamental. When we allot a task to a salesman how do we know that there is so much business in that territory that ought to be secured? And how do we know whether that salesman is qualified up to a certain standard that we want to set?

I should like very much to hear from Mr. Staubach, telling us about the Burroughs' way of arriving at sales quotas. We work on a quota. We manufacture bookkeeping machines and we take the number of bookkeepers in a territory as a basis for the quota. I know we are wrong, but I feel about it a good deal like the Irishman who was standing in the trench and remarked,—"Pat, this is a hell of a war, ain't it"? Pat says,—"It is, but it is far better than no war at all." That is the way I feel about our quota,—I know it is wrong, but it is better than no quota at all. I should like to hear how the Burroughs people arrive at a proper scientific idea of what ought to come out of a given territory.

Then on the question of the education of salesmen, I believe in careful selection, which is the foundation, careful training and then putting him out; and if he produces, if he demonstrates his ability to sell, then undertake to educate him. Our experience has proven that it doesn't pay to waste much time educating the man until you know he has sales ability. Then you can spend all kinds of money on training.

C. P. Staubach: I want to say just a word first in answer to one or two questions that Mr. Crockett brought up. I think in the present day and in view of the times, the one prime requisite is to secure an absolutely happy sales force. That is the biggest job the sales manager has on his hands today. I think it is time for the sales manager to find means of examining the possibilities of the salesman having a happy existence and receiving remuneration on a basis which will enable him to pay the living expenses of himself and his family. I believe that we are very often too high up and above the selling forces; we do not get right down close to the men and find out what is worrying them. What is worrying a man is what is interfering with sales, more than anything else. I am making this a study at close range at the present time, after having handled in a national way a selling force of fifteen hundred men. I am making a close study on the firing line of some of those propositions. We do not want to overlook the importance of *the man*, and his mental attitude.

One other word, too, with regard to this matter of standardization. I have seen standardization worked in different ways. I have had charge of a standardization program myself, and I find that the finest results along that line that can possibly be secured come from a judicious selection from the men in the field who are actually selling the goods and using their heads. Their records show which these are. Select these men, bring them in, take a week to iron out the inconsistencies, and get down to standards. Lock them in a room with factory representatives and let them stay there until they agree on something. If you get the selling force in on that sort of program, when your standardization program goes out you will find the salesmen are for it and will put it over.

I tried this method in the case of bank bookkeeping machines some time ago, and I found by going through factory schedules that there were one hundred and nineteen variations in orders then on hand, meaning single orders going through. We had a gathering of salesmen from all parts of the country, from provincial as well as city territory, and we had them at the factory for a week. When we got through, we had three standards which still exist, and they have proven that we can get better productions, better delivery, give better satisfaction and from a business standpoint get the profit that there should be in the manufacture of a highly specialized line. If we try to standardize without bringing the outside men in and try to do too much thinking for them we shall overlook one of our larger assets.

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[1] V. P. in charge of sales, Elliott-Fisher Co., Harrisburg, Pa.

With regard to this matter of quota, I do not know whether everybody here agrees that the quota idea is fundamentally right or not. There isn't time to discuss that. I do believe that in certain lines of selling the quota is a very important factor.

To begin with, the quota idea starts at the point where a business enterprise of any kind realizes that it needs a definite estimate of the task in hand, whether this is a question of manufacture or of distribution or both. We must estimate the possibilities. That means two things,—the possibilities of the production plant and possibilities of the field. These must be estimated.

Bearing in mind what the manufacturing possibilities of your concern are as to volume, the merit of the product and the market, it is necessary to place a reasonably accurate estimate on what is to be expected of the distributing force for a given period, a year or whatever you may determine.

Distribution may be through dealers or direct branches or both. The fullest application of the quota plan is perhaps through a direct selling force, as the quota idea reaches its highest development where the sales are made by men directly representing the house, and I will therefore illustrate a case where we can apply quota to salesmen working directly for the firm through branch houses. The same thing, however, can be applied to dealers.

If the concern, to start with, has a clear idea of the volume of business that it can reasonably expect to secure and take care of (there is no need of selling a lot of stuff you can't deliver), the company must establish its sales quota. This may be the amount that the company expects or hopes to sell, or it may be based above or may be based below that volume. You may put your quota at exactly what you can manufacture or you may place it above that or below that figure.

If you place a quota above what you think can be accomplished, it is on the theory that the higher you aim the higher you hit; but on the other hand we are liable to handicap ourselves if we set a mark which only a few men can reach. Men like to win and don't like to lose out. If we place a quota below the possibilities, then it is because a quota must be regarded as a minimum to be exceeded and not a maximum to be reached.

Perhaps a valuable guide to be followed is to make the quota for a given year something exceeding the previous year's results but below the current year's expectancy. Have it between the two. When the men know that that is the basis, they realize that the quota is a minimum. They know it can be exceeded because it is not unreasonably above what has been accomplished in the previous year, and they also know that they have a fair chance to make it.

Having set a company quota, this can be recorded in various ways. If you manufacture only one article you can express your quota in numbers of that article. If you have various articles it is well perhaps to work it from the basis of dollars and cents valuation. The concerns in this country which are using the quota system with the greatest success, I believe, are expressing quota in terms of what they call a "sales point." They do not talk about so many millions of dollars but so many sales points. It is customary to make $25 a point, and after the selling force gets used to it they speak of a twelve point sale instead of a $300 sale and know exactly what they are talking about. If the article is something that sells below $25, some concerns might want to make a point $5. That is a mere detail.

Suppose we have our quota for the entire country; suppose we have set a quota of $25,000,000 worth of business for the entire country. The next question is, "How are we going to properly distribute that quota over the area and not load up one place and slight another"?

We must select certain units. You can take states, if you please, and set quotas on each state, but you will find where any article has a national distribution, the state unit is probably too coarse. You will have few dealers that can handle an entire state or several states, and you will find that the state line is no longer a good dividing line between territories. You should divide territories according to lines of travel and other considerations of that sort, state lines meaning nothing.

Having studied the quota subject for a number of years, I believe that you can take it as an axiom that the proper unit for figuring sales possibilities is the county, and in the larger cities, arbitrarily determined business "blocks."

If, with very few exceptions, you divide your territory according to counties, agencies having certain numbers of counties, there are very few places where county lines have to be cut. There are a few exceptions; for instance, in some western states where a wide river runs down through the middle of the county. Here you may perhaps have to divide the county because there are no bridges across the river.

In order to get quotas arranged by counties you have to start with certain statistics. Populations is one factor, easy to secure, but after it has been used sufficiently it can be displaced and absolutely ignored in many lines of business, although remaining an important item in others.

There are three factors, as I see it that you can get data for. If your product already has a wide sale you have experience to work them,—what has been done can be done again and exceeded. Where goods have been sold, repeat orders can be secured or the old equipment replaced. We therefore take as one of the factors the present users or present buyers.

The next factor is the people who can use and who never have bought. A third factor would be people who have bought similar goods to yours which you may not have sold. In the specialty line those data are a litte difficult to get, because in certain territories you can get very accurate information as to what competitors have sold and in other localities you cannot; and to be perfectly fair, you must get comparisons that are reasonably accurate.

I cannot go into details as I should like to, but here is the broad proposition on which the present Burroughs' quota system is operated. The fact that it is interesting to other concerns is shown by the fact that the list of business enterprises on which it is based, has been furnished at their request to other concerns in similar lines.

Last year we had a force in our home plant actually count every business enterprise in the United States and divide these according to four classes of business ratings. We took about twelve general groups of business lines and divided each one of these twelve into four ratings.

For instance, manufacturers provided one classification. We have a count including every manufacturer in the United States. We know the total number in each county in the United States. How do we get it? In the first place, there are about twenty reference books which give us everything we want. We begin with Dun or Bradstreet. That gives us the great bulk. Then we have certain other directories which include lines of business not covered by Dun's or Bradstreet's, such as banks, building and loan associations, electric and gas companies, but all of these have national directories which give the lists. Using about twenty of these directories, we had a force of people make the count and were able to rate them into these classes, if I remember them all; —first, banks; second, other financial institutions separate from banks, taking into that classification real estate agents, building and loan associations and enterprises of that sort; third, city, county, state and national prospects, which we term "government"; fourth, the public service corporations, a classification including water, gas and electric companies; fifth, the manufacturers; sixth, the wholesalers;—we do not try to divide the manufacturers or the wholesalers excepting into four classes according to the rating; seventh, the department stores; eighth, the general stores; ninth the garages, which are getting numerous; tenth, other retailers. Then we have a general "miscellaneous" classification to include all lines of business not included in the other groups.

Now, what is the object of doing all this work? We know in each city and each town that has a post-office how many concerns are in business in that town, and we know which classification they fall into and what the ratings are. All we have to do is to know how much more one group is worth to us than another. If the retailer is worth one dollar to us and the wholesaler is worth five, we have something to work on because then in figuring our quota we would rate five retailers to one wholesaler.

We are able to secure a proper ratio in the following way,—some concerns follow a similar plan: As an instance we know how many manufacturers there are in the United States rated between $5000 and $10,000. We know how many adding, bookkeeping and calculating machines in point value have been sold to manufacturers rated between $5,000 and $10,000. We divide that money value by the total number of manufacturers of that size in the United States and thus secure our value in the past per manufacturer thus rated. By getting the same figure on the larger manufacturers and the smaller we have the relative value of the four classifications of manufacturers.

We know in any single county or territory how many manufacturers there are, rated between $5,000 and $10,000, and we know what the potential value of a manufacturer of that size is to the business next year. Knowing this we can charge at that rate for the number of manufacturers for each town, add towns together in a county, thereby producing the county valuation; and if there are several counties put the totals of the counties together. This done we have a quota based on the people in business that should be sold.

We take this as a fifty per cent factor at the present time. We started by making the user a sixty per cent factor changing later to fifty per cent; the business enterprise not using, a forty per cent factor; and population, a ten per cent factor.

Population, however, is a troublesome factor, because we have different kinds of population. We had to make an adjustment for the Indians the Chinese and the Negroes. We had to determine how many Negroes it took in the South to make one white man as a business possibility. And then again we must realize that, for instance, New Britain, Conn., with a foreign factory population, is a very different proposition from the population in the state of Iowa, filled with wealthy farmers.

The population factor will help until you can get to the point where you can get some real data as to the people you have sold and how much they have bought and the similarity of the other prospects in the territory; after which population can be discarded as a factor in some cases, while in others it should be retained.

Our quota system is a refinement following a number of years of research and practice; the company is not merely sold on the proposition, the district manager is not merely sold, the agency manager is not merely sold, but the salesman would be like a lost child if he didn't have a quota to work for and to exceed. And by having the salesman know that the plan has been worked out on a thoroughly fair basis, he knows that when he has for instance a fifteen hundred point territory that there are fifteen hundred points worth of business there, and it is up to him to get it as a minimum.

Some people say, "Why not rate quota according to the relative ability of your representative in each territory"? If you do that you will never get anywhere. You must rate the possibility of the territory and then find the man for the place. If he can't bring out the full sales possibilities, you have the wrong man. There are modifications, there are some men who can sell in the Ozarks and cannot sell in the city of New York, and vice versa. It is a part of sales managership to properly place those men.

In working up these possibilities it is very simple to set a county quota based in part on machines in use and in part on business enterprises that have not been sold, and obtain a county valuation figure.

The next proposition is how to get this quota for an agency down to the individual man. Take for instance the city of New York where we have five separate branches in one city. There we have to introduce the "block" system.

The block system is nothing more in the world than assuming each city to be a "state," and providing that little state with its proper counties. A "block" is a "county in the city." We block the city, getting a good map of the city, and mark on the four sides of each block the value of the product which has been sold, or is in present use. If one's records are far enough along one can also have a count on that block of the prospects that have not been sold, and rate them by perhaps twelve business and four rating groups the same as one does a county.

Then group these blocks. A good busy block with office buildings in it will make a "county" in itself. In the residential section you will have to take the whole end of the city to make one block. Simply create a measuring stick of some kind and then make arbitrary blocks and don't change them. If you decide to give your men an average of say fifteen hundred point territories, simply give each the requisite number of neighboring blocks, and when one gets a territory he knows it is a fifteen hundred point territory, that the business is there and it is up to him to get it.

By the old method of hit and miss quotas, when you dismiss a salesman or he leaves you, you just cut his territory in two, making two territories out of it, and give each of the new men the same quota the old man had. Perhaps this meant more business; but the man knew it wasn't a fair distribution, and when the man's state of mind isn't right he won't produce. About two or three months ago, at a meeting of sales managers in this city, I presented a few charts and traced through the method by which the individual manager can take the company figures and utilize them to make proper territorial units for his men. There are some managers here who are going to visit my office tomorrow just to see how this idea has been worked out in a local territory.

My map at Detroit shows how it is worked out for the United States as a whole. In an agency we indicate each block on maps, on city maps and on country maps, separately marking each block with its quota for the month and cumulative for the year to date. We have colored tickets to show how these units are traveling. A yellow ticket means below quota today. White means above quota but below the agency average. Red means above the average, and blue means better than two hundred per cent.

The men as they come in observe the tickets and go back into their territories with minds made up that those yellow tickets are not going to stay there longer than they can help. Bulletins to the out-of-town men carry the same information.

Back of the idea is this: Too many of us wait until the year is over and then get a lot of statistics that enable us to figure out all the mistakes we have made. If we could have a system where we could get this information like a daily newspaper and know where we are traveling, we would take corrective steps in time. If we see a yellow ticket on a map surrounded by a lot of red ones we can correct the conditions before it is too late.

I want to say that if you have fixed your quota right and the man knows that it is fixed right, then he is satisfied with his territory and goes out to demonstrate how much he can exceed his quota. If you have contests of any kind,—and they are good things at times in any organization,—they must always be based on a handicap rate, because it is absolutely impossible to give all agency managers and all salesmen territories that are absolutely equal in possibilities.

CORRESPONDENCE

To the Editor:

As a mining engineer, I have worked along lines similar to scientific management. However, it was not until I entered the industrial field that I heard of Mr. Taylor and his work and began to be interested in management as a science. My first step was one of investigation, not of scientific management, but the science of management. I discussed it with men who professed to be experts in it, with manufacturers and their employees, in fact, with anyone who had come in contact with the work.

This investigation showed that to the general public, Efficiency, Engineering, Scientific Management, Industrial Engineering and so on are synonymous. It was also evident that they are all considered as systems or cure-alls. Even in plants where work along Mr. Taylor's lines had been done, there were those who considered it as a *system*. In rare cases was any of this work considered a science.

The work of Mr. Taylor was so sound, and the principles and mechanisms that he developed from his studies so logical, that it is difficult to understand why his work has not been recognized for what it is—a branch of engineering. Unfortunately for the acceptance of his teachings, his ideas were taken up by all sorts of men. There were those who had been taught by Taylor himself and who are fully prepared to do the work. But there were also accountants, auditors, mechanics, shopmen, clerks and what not. This was bad enough, but was made worse as each one gave his work a special name, such as Efficiency Management, Industrial Management, etc. But the crowning error was when they assumed the title of Engineer. They were not engineers and had no conception of the functions of an engineer or his method of thought, training, etc.

One always thinks of a doctor as a man who has gone through a course of preparation and training; one whose work has been recognized by a diploma from a recognized institution. They do not think of the chiropractor in the same way, no matter what good work he may do. The same may be said of the engineer. He has gone through a period of study and apprenticeship. He has earned the title which has been bestowed upon him by the institution which trained him. He has not assumed the title as does the chiropractor and the so called industrial engineer.

The teachings of Mr. Taylor have been held back because all work similar to his has been classed as a cult, and because the men doing it have taken a false title.

A business man is not easily taken in by cant, in fact, he seriously objects to anything of that sort. Yet this is what is handed him in many discussions on scientific management. It must be realized that when the layman talks of scientific management, he does not associate it with any particular school. When one speaks of the Taylor System to him he considers it only one of the several *systems* being introduced by "experts." Therefore, when he hears discussions on psycho-analysis, the psychology of the workman, etc., he loses faith in the entire work. That kind of discussion strikes most men as mere hypocrisy. It is in line with the doctor who uses Latin phrases to impress his patients. What the business manager wants is facts.